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BRITISH MEDICAL JOURNAL

LONDON SATURDAY SEPTEMBER 29 1945

FURTHER REDUCTION IN HOSPITAL INFECTION OF WOUNDS

BY

VALENTINE LOGUE, F.R.C.S., M.R.C.P.

AND

WYLIE McKISSOCK, M.S., F.R.C.S.

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Assessments of incidence of hospital infection of wounds in the World War of 1914–18 were made by Fleming and Porteus (1919) and by Stokes and Tytler (1918–19). The investigations of the former workers showed that 15% of all admissions were already infected with *Streptococcus haemolyticus* and that after a further stay in hospital of a week or more the incidence rose to 90%. Stokes and Tytler (1918–19) showed a rise in incidence of infection with *Str. haemolyticus* from 18.2% in the first seven days to 42.1% at the end of two weeks. The table below gives the incidence of infection with other organisms over the same period.

Swab	No. of Wounds	Str. haem.	Staph. aureus	Coliforms	Diphtheroids
Initial swab ..	165	18·2%	14%	23%	7·2%
1 to 7 days ..	60	21·6%	15%	10%	3·3%
4 to 14 days ..	19	42·1%	36·8%	26·3%	

After Stokes and Tytler (1919).

At the beginning of the Second World War the rate of hospital infection was still unpleasantly high. In 1940 Miles and others described 74 cases in which the percentage rate of cross-infection (or hospital infection) reached 58 for a combination of *Str. haemolyticus, Staph. aureus,* Gram-negative bacilli, and diphtheroids:

	Str. haem.	Staph. aureus	Gram-neg. Bacilli	Diphtheroids
Group 1 20 cases ..	40%	45%	15%	10%
„ 2 30 „ ..	13·3%	6·5%	10%	10%
„ 3 24 „ ..	25%	8·5%	33·3%	33·3%

Of the 74 wounds, 43 acquired new infecting bacteria, giving a total hospital infection rate of 58%. (After Miles *et al.*, 1940.)

In 1940 McKissock, Wright, and Miles found a cross-infection rate with *Str. pyogenes* of 15.4% in a series of air-raid casualties under routine local and systemic treatment with drugs of the sulphonamide group.

It would thus appear that relatively little abatement of the risks of hospital infection had taken place between the two wars in spite of the increase in experience during the intervening period, when certain reports, notably by Cairns and Cowan, indicated some of the more striking points in theatre and ward infection, all of them examples of hospital infection. It was in the light of this accumulated knowledge of cross-infection that McKissock, Wright, and Miles made the experiment which they recorded in 1941. They devised a dressing technique to reduce some of the more obvious risks of hospital infection. No attempt was made to block *all* channels of infection, but a serious assault was made upon the many channels which were laid open during the course of the dressing of wounds as ordinarily carried out in the hospital ward. The result of the adoption of an improved dressing technique over a four-months period, contrasted with a previous four-months period, showed a reduction of cross-infection with *Str. pyogenes* from 15.4 to 1.1%.

The present paper records the prophylactic effect of the improved dressing technique, which, since our 1941 report, has been in continuous use over a period of three years. In the first four months of its trial *Str. pyogenes* was used as the sole indicator of hospital infection, but in view of the marked diminution of the streptococcal infection rate obtained in the original experiment the scope was subsequently widened to include all the potentially pathogenic aerobic bacteria commonly found in wounds.

Conditions of the Three-year Trial Period

The trial was made for 20 months in one hospital, after which the unit was transferred to another hospital, where the remaining 16-months trial was held. Neither building was in any way modern from the structural standpoint and no special facilities were available to render the conditions of the experiment unusually favourable. During the first 20 months the staff was composed mainly of voluntary aid detachments with a small number of civil nursing reserves, while in the second hospital the staff consisted mainly of nurses in general training. The theatre staff remained substantially unchanged throughout, and was composed almost entirely of voluntary aid detachments. One fully trained sister was in charge of the theatre and the 70 beds comprising the unit. Junior medical personnel changed at roughly yearly intervals.

No special precautions were taken to avoid airborne infection other than insistence upon the completion of bed-making and ward-cleaning at least half an hour before the performance of dressings and the closure of all doors and windows during dressings. The dressing technique demanded the employment of one doctor and three nurses at each dressing and followed exactly the routine laid down in the original paper, which was somewhat more elaborate than that recommended in the M.R.C. Memorandum on the subject.

Material

There were in the whole period 1,129 wounds at risk, of which 882 were clean surgical incisions and 247 traumatic wounds. Of the latter, 231 already contained pathogens at the time of admission, while in 16 cases cultures from the initial wound swab were sterile. It is probable that in the later months of the three-year trial period the risk of hospital infection was less grave than in the earlier period by reason of the smaller number of septic cases admitted to the wards. During this period, however, there were nearly always some infected wounds to swell the reservoir of infection permanently pro-

TABLE I.—*Details of Wounds*

Surgically Inflicted		Traumatic	
Ventriculography	433	Head and back	220
Craniotomy	251	Arm	12
Laminectomy	92	Leg	10
Burr-holes	60	Trunk	5
Leucotomy	12		
Trigeminal sensory-root section	10		
Arteriography	9		
Miscellaneous	15		
Total	882		247

vided by the respiratory tracts of medical and nursing personnel, the patients, and their visitors.

Technique of Investigation

Bacteriological Method.—Wound swabs were taken from all surgically inflicted wounds wherever there was a moist surface, gaping of the wound, eversion of a skin edge, or obvious clinical infection. A swab was taken from traumatic wounds at the time of the first dressing after admission to our department and again at *every* subsequent dressing (on an average about thrice weekly) until healing was complete. The initial swabs were cultured aerobically and anaerobically, but if no anaerobes were obtained on this occasion further anaerobic cultures were omitted.

Chemotherapy.—All patients with traumatic wounds were given a five-day prophylactic course of sulphapyridine, sulphathiazole, or sulphamezathine, amounting to 30 g. in all. Open traumatic wounds were dusted with sulphanilamide powder, and a small number of the clean surgically inflicted wounds were similarly dusted in layers as they were closed. Penicillin was not given to any patient in the series.

"Hospital" or Cross Infection.—Infection has been classed as "silent" or "clinical," according to the following criteria: *Silent infection* was indicated by the growth of organisms from a bacteriological swab taken from a healed or healing wound where no evidence of clinical infection could be found; *clinical infection* was considered present if there were local signs such as stitch abscess, purulent discharge, swelling and oedema, etc., or where there was general constitutional disturbance. An attempt has also been made to separate true theatre infection from ward infection, as will be seen in Table II. Theatre infection was presumed: (1) where organisms or evidence of infection was found beneath the silver-foil seal applied at the end of the operation; (2) where infection occurred within the first four days after operation; (3) where infection started in the deep layers of the wound, the superficial layers being healed.

Results in Surgically Inflicted Wounds

There were 18 cases of infection (silent and clinical) in the 882 wounds—an incidence of 2.4%.

TABLE II

Case	Where Infected	Day of Infection	Organism Infecting	Comments	Type of Infection
1	Ward	3rd	Staph. aur.	Bandage removed by patient	C.I.
2	,,	10th	Staph. alb.	Constantly scratching wound	C.I.
3	,,	34th	Staph. aur.	Incision penetrated by comb tooth	C.I.
4	Theatre	4th	Staph. aur.; Str. faecalis	Bone flap removed	C.I.
5	,,	7th 1st dressing	Staph. alb.	Healed in 36 days	C.I.
6	,,	4th 1st dressing	,,	,, 6 ,,	S.I.
7	,,	4th 1st dressing	,,	,, 7 ,,	S.I.
8	,,	7th 1st dressing	Not swabbed	,, 18 ,,	C.I.
9	,,	7th 1st dressing	,,	,, 16 ,,	C.I.
10	,,	2nd	Staph. alb.; Bact. coli	,, 11 ,,	C.I.
11	Ward	9th	Staph. alb.; diphtheroid	,, 10 ,,	S.I.
12	,,	10th	Staph. aur.; non-haem. strep.	,, 75 ,,	C.I.
13	,,	7th	Staph. aur.	,, 100 ,,	C.I.
14	,,	10th	Staph. alb.; diphtheroid	Not healed on discharge; C.S.F. leak	S.I.
15	,,	8th	Staph. aur.; diphtheroid	Healed in 3 days; C.S.F. leak	S.I.
16	,,	5th	Staph. alb.	Healed in 37 days	C.I.
17	,,	10th	,,	,, 26 ,,	C.I.
18	,,	7th	,,	,, 5 ,,	S.I.

Staph. aureus refers to coagulase-positive staphylococci, and *Staph. albus* to coagulase-negative staphylococci. C.I. indicates "clinical infection." S.I. indicates "silent infection."

Analysis of these 18 cases of added infection revealed that the patients themselves were responsible on three occasions. Two patients removed their bandages and scratched their own wounds, and one penetrated her healed incision with a comb on the 34th day after operation. Thus 15 cases only, of which 7 occurred in the theatre and 8 in the ward, may be considered as true examples of hospital infection of wounds—an incidence of 1.7%. The theatre infection rate is 0.8% and the ward cross-infection rate 0.9%.

None of the 18 cases cross-infected contained *Str. pyogenes*, and of the 8 cases infected in the ward 3 were silent infections and only 5 showed clinical evidence of sepsis. The high incidence of *Staph. albus* (5 out of 8 cases) was presumably due to the prevalence of this organism on the human scalp and hair.

Results in Traumatic Wounds

In the series of 247 traumatic wounds—most of which were due to enemy action and were of the heavily contaminated variety familiar to those who have had the care of air-raid casualties—231 were already infected on admission. *Str. pyogenes* was present on admission in 11.3% (28) of the infected wounds. A total of 27 of the 247 wounds later yielded additional organisms (of some type) as a result of hospital infection—an incidence of cross-infection of 10.9%. Of the 27 cases only 4 became cross-infected with *Str. pyogenes*—an incidence of 1.6%.

Comparing the figures with those of Stokes and Tytler, it can be seen that the increase in incidence of *Str. haemolyticus* in wounds from 18.2% to 42.1% in their series has not been in any way approached in ours. The rise, in our series, of infection with *Str. pyogenes* is only from 28 patients (whose wounds contained *Str. pyogenes* on admission) to 32 during the whole period of stay in hospital—i.e., a percentage rise from 11.3 to 12.5.

We can thus show complete protection from *Str. pyogenes* in 882 clean surgical wounds. In traumatic wounds the incidence was reduced from 1.6% from our own "pre-dressing technique" incidence of 15.4%. The total incidence of cross-infection of 11.3% shows a considerable reduction when compared with the figure of Miles *et al.* of 58% obtained in the early stage of the war.

Conclusions

A strikingly low rate of cross-infection of wounds has been maintained during the use of the improved dressing technique in our department over a three-year period. As no material alterations in the conditions of the experiment have taken place during the three years it is fair to assume that the improved dressing technique is alone responsible for the lowering of the rate of cross-infection. The continuation of the technique over so long a period of time, under the conditions of war, with all its shortages of material and man-power, proves that there is no essential difficulty in observing the rules laid down by us in our original paper.

As to the intensely practical value of this reduction of hospital infection one has but to consider the saving in hospital-bed days. A wound which breaks down as a result of added infection may easily lead not only to days but to many weeks or months of additional stay in hospital, with all its cost in food, bedding, drugs, dressings, and the time of nurses and doctors, apart from the unfortunate and sometimes lethal effect upon the patient.

Summary

An improved dressing technique designed to avoid cross-infection has been in use for a period of three years, during which time 1,129 wounds have been treated.

882 wounds were surgically inflicted, while 247 were traumatic and mainly the result of enemy action.

The total incidence of cross-infection in the 882 clean cases was 2.4% and in the 247 traumatic wounds 10.9%.

Str. pyogenes has been eliminated as a cross-infecting agent in the 882 clean surgical wounds and its incidence in traumatic wounds reduced to 1.6%.

The improved dressing technique is considered to be the sole factor in these striking reductions upon previously published figures for hospital (or cross-) infection of wounds.

REFERENCES

Fleming, A., and Porteus, A. B. (1919). *Lancet*, **2**, 49.
McKissock, W., Wright, J., and Miles, A. A. (1941). *British Medical Journal*, **2**, 375.
Medical Research Council (1941). War Memorandum No. 6.
——— (1944). War Memorandum No. 11.
Miles, A. A., *et al.* (1940). *British Medical Journal*, **2**, 855.
Stokes, A., and Tytler, W. H. (1918–19). *Brit. J. Surg.*, **6**, 111.

A SYNDROME RESEMBLING ADDISON'S DISEASE, WITH SEVERE ANAEMIA, STEATORRHOEA, AND MELANURIA

BY

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A case resembling Addison's disease with a severe normocytic normochromic anaemia, which was at first treated as a macrocytic anaemia of unknown aetiology, is here described. Addison (1855) in his original description of the disease mentioned anaemia, but it is not accepted nowadays as a common or characteristic feature of the syndrome (Goldzieher, 1939).

Case Record

Miss A., aged 22, had a sudden attack of stomatitis in Feb., 1943. At times it was so severe that for several days she was unable to eat or drink. It continued until her admission to a military hospital on July 5, 1943. She had post-prandial upper abdominal pain and loose motions. Amenorrhoea had been present for three months. She was extremely ill, had a lemon-yellow tint, and was wasted Shallow ulcers were present inside the mouth. The spleen was not palpable and there were no changes in the nails. Blood picture on admission: haemoglobin, 36%; R.B.C., 1,600,000; colour index, 1.1; W.B.C., 2,000, with a normal differential white count; reticulocytes 0.1%; polychromasia; occasional Howell-Jolly bodies; marked anisocytosis; one primitive megaloblast, and one normoblast. Red-cell fragility was normal.

She was treated with liver extract intramuscularly, iron, marmite, vitamin C, vitamins A and D, nicotinic acid, and a high-calorie diet. The stomatitis recurred several times. She apparently improved, and on discharge the blood picture was: haemoglobin, 92%; R.B.C., 4½ millions; W.B.C., 9,000. A test meal showed that free acid was present. She was still feeling subnormal, however, and the amenorrhoea persisted. She was discharged from the Forces in 1943, all treatment being discontinued.

Two weeks before admission to the County Hospital, Pembury, on March 8, 1944, she had an attack of "influenza." A blood count showed R.B.C. 2,000,000. Liver injections were given without response. The temperature persisted.

On admission she complained of lack of energy, dizziness, especially on standing, cold hands and feet, and sore mouth. There were no previous illnesses. Her mother, two stepbrothers, and two stepsisters were alive and well. Her father died from an unknown cause.

Examination.—The temperature was 99.5°. She was a thin short girl, and lay in bed, making few spontaneous movements. She had a pale waxy appearance and there were numerous dark-brown pigmented spots on the limbs, trunk, and face, none exceeding 3 mm. in diameter. She stated that these spots first appeared when she became sick in Feb., 1943. They began to disappear when her condition improved in the military hospital, but have recently been increasing. The apex of the heart was 3½ in. from the midline in the fourth left intercostal space; there was an apical systolic murmur. The blood pressure was 86/34 mm. Hg. Lungs, normal. The tongue was clean and not abnormally smooth. There were a few shallow ulcers on the inner side of the lip, 3–4 mm. in diameter. They had a greyish base and red periphery, and in appearance were identical with those of aphthous stomatitis. Numerous pigmented spots were present on the hard palate. The liver and spleen were not palpable. C.N.S., normal. Urine: Albumin, *nil;* sugar (Benedict), *nil*; reaction, acid; specific gravity range, 1010–1030; volume, maximal 25 oz. daily, minimum 6 oz. daily; average daily volume of urine, 20 oz., dark orange-yellow with a tinge of brown; no blood and no casts. Blood examination showed: haemoglobin, 34%; R.B.C., 1.55 millions; colour index, 1.1; reticulocytes, 1%; mean cell diameter, 7.7 μ; W.B.C., 9,400—polymorphs 70%, lymphocytes 18%, large hyalines 4%, eosinophils 8%; anisocytosis and polychromasia present.

In view of the original diagnosis the patient was given 2 c.cm. of neohepatex daily for six days, and two pints of blood were transfused. No improvement followed. The blood pressure did not rise, there was marked asthenia, and the reticulocyte count remained at 1%. From the seventh day (March 15) 5 c.cm. of extract of suprarenal cortex (*B.P.C.*) was given intramuscularly daily for six days, and then desoxycortone acetate 10 mg. daily for eight days—i.e., until March 29. The blood pressure rose rapidly (March 23). The reticulocyte count began to rise between March 18 and 28. It was found that 15 mg. of desoxycortone acetate every other day maintained the blood pressure at 120/80 mm. Hg. The haemoglobin increased, and on discharge it was 80–85% (Haldane scale); R.B.C., 4 millions, and colour index 1.0 (Fig. 1).

The evening pyrexia fell to normal 11 days after there was clinical response to desoxycortone acetate, suggesting that the pyrexia was also due to the cortical insufficiency. This is at variance with the

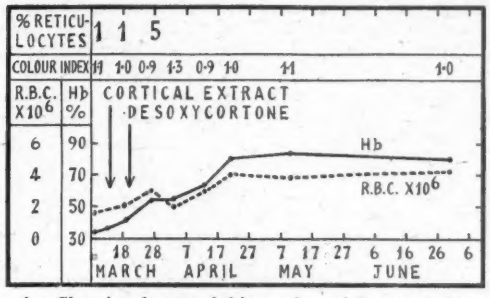
% RETICULOCYTES 1 1 5
COLOUR INDEX 1·1 1·0 0·9 1·3 0·9 1·0 1·1 1·0
R.B.C. X10⁶
Hb %
CORTICAL EXTRACT
DESOXYCORTONE
Hb
R.B.C. X10⁶
6 4 2 0
90 70 50 30
18 28 7 17 27 7 17 27 6 16 26 6
MARCH APRIL MAY JUNE

FIG. 1.—Showing haemoglobin and erythrocyte response to treatment.

usually described "subnormal temperature" (Leyton, 1939), though Loeb (1940) describes pyrexia occurring pre-terminally in this disease.

On admission the sodium ion content of the blood was at a normal minimum, while the blood potassium ionic content was at a normal maximum. It is interesting to note in Fig. 2 the rise in

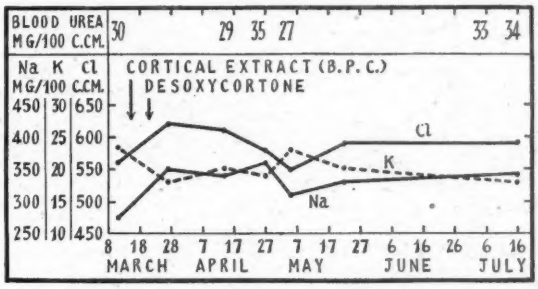

FIG. 2.—Showing blood ionic changes during treatment.

the potassium ion as the sodium ion falls, and vice versa. Radiographs of the chest were normal. A test meal showed that free acid was present, and a barium meal and follow-through revealed nothing abnormal.

The patient rapidly became ambulatory; her appetite was ravenous and, except for occasional headaches, she appeared to be a normal active girl. Towards the end of April the blood pressure fell steadily from 120/75 to 105/60 (Fig. 3) and general asthenia

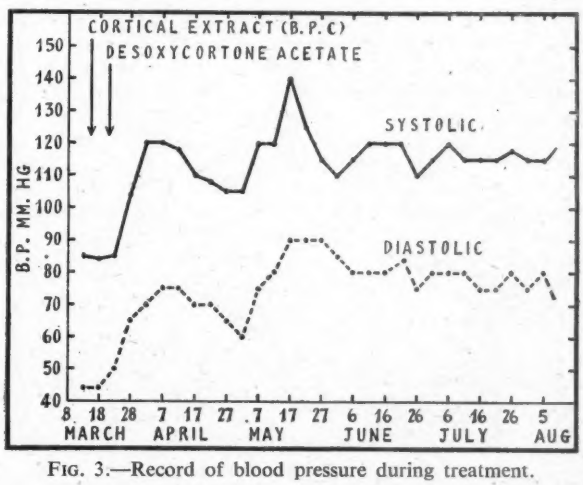
CORTICAL EXTRACT (B.P.C.)
DESOXYCORTONE ACETATE
B.P. MM. HG
150 140 130 120 110 100 90 80 70 60 50 40
SYSTOLIC
DIASTOLIC
8 18 28 7 17 27 7 17 27 6 16 26 6 16 26 5
MARCH APRIL MAY JUNE JULY AUG

FIG. 3.—Record of blood pressure during treatment.

returned; desoxycortone acetate and sodium chloride were pushed (NaCl 15 g. and desoxycortone acetate 30 mg. daily). She became drowsy in the second week in May, when the blood pressure rose to 140/90 mm. Hg and some oedema of the legs appeared (Loeb, 1940). Cutting down the salt intake to 4 g. daily and the desoxycortone acetate to 15 mg. every other day resulted in a marked improvement, with a fall in blood pressure. Although she would not drink much and the urinary output was not high (20 oz. daily) before treatment, the blood urea was never above 35 mg. per 100 c.cm.

Subsequent Progress

On Oct. 26, 1944, 500 mg. of desoxycortone acetate was implanted subcutaneously under local analgesia at the West Glamorgan County Hospital, Neath. On Nov. 10 the blood pressure rose to 152/100 and there was some puffiness of the face. Her blood pressure thereafter remained at a satisfactory level until Jan. 8, 1945. A further subcutaneous implantation of 600 mg. of desoxycortone acetate was made on Jan. 17. The blood picture on Dec. 11, 1944, was: haemoglobin, 86%; red cell count, 4½ millions; reticulocytes, 0.11%.

She was readmitted to this hospital on Feb. 8, 1945. The blood picture was then: haemoglobin, 77% (Haldane scale); red cells, 3.53 millions; colour index, 1.1; white blood count, 7,400—polymorphs 67%; mean cell diameter, 7.4 μ; reticulocytes 3%. A test meal showed low free acid. Blood pressure range, 110–115/60–70. Blood ions: Na, 335 mg.; K, 22.5 mg.; chloride, 635 mg. (as NaCl); blood urea, 30 mg. per 100 c.cm. The urine contained melanin. Faeces: Neutral unsplit fat, 7.5%; free fatty acids, 13.1%; soaps, 39.3% (total fat, 59.9%). Of the faecal fat 12.5% was unsplit and 87.5% was split.

It was noticed during this admission that the incision where the crystals had been implanted was discharging a little pus. On various days during the follow-up period she discharged crystals of desoxycortone acetate equal to 300 mg. Investigations were carried out during this stage of her illness, without any further injections of desoxycortone acetate. On May 3 her blood pressure had fallen to 90/60. On May 14 asthenia was marked; B.P. 100/60. Two days later she complained of nausea, and then vomiting and diarrhoea began (May 19), and became quite persistent. Vertigo was marked. Injections of desoxycortone, 15 mg. every other day, were restarted on May 23, with rapid cessation of the gastro-intestinal symptoms. On May 25 300 mg. of desoxycortone acetate was implanted subcutaneously. On June 4 her blood pressure had risen to 120/90 and she was able to walk about the ward, feeling much improved.

Differential Diagnosis

That this patient is not suffering from *pernicious anaemia* is indicated by the presence of free acid in the test meal, the colour index range of 1.0 to 1.1, the mean cell diameter (halo method) in neighbourhood of 7.5 μ, the absence of response to liver, and the dramatic response to desoxycortone acetate. Against a diagnosis of *Simmonds's disease* is the absence of a history of past pregnancy and post-partum haemorrhage, no bradycardia, no loss of secondary sexual characteristics, and the presence of pigmentation. *Pellagra* would presumably respond to liver injections, owing to the high nicotinic acid content of the usual liver extracts. The absence of reducing substance in the urine and the normal colour of the cartilages of the nose and ears are against diagnoses of *ochronosis* and *alkaptonuria.* No evidence of a primary *melanotic carcinoma* was found. The choroid appeared normal; no glandular or hepatic enlargement was present; and there was a dramatic response to desoxycortone.

Mesenteric chyladenectasis and *steatorrhoea,* with features of Addison's disease, have been described (Glynn and Rosenheim, 1938). The patient improved for a while on extract of suprarenal cortex (*B.P.C.*), but ultimately relapsed and died. At necropsy no lesion of the suprarenals was found, and a functional deficiency of these glands was postulated. Suprarenal insufficiency was diagnosed in a case of non-tropical sprue by Holmes and Starr (1929), but the rapid improvement in their patient with daily parathyroid extract Collip made this diagnosis, in their opinion, untenable. Functional suprarenal insufficiency has also been suggested by Gloor (1929–30) in non-tropical sprue.

Tuberculosis of the Suprarenals and the Mesenteric Lymph Glands.—The rapid response to desoxycortone acetate indicates that the steatorrhoea is due to a functional failure of absorption and not to an organic obstruction.

Idiopathic Steatorrhoea.—Many cases of idiopathic steatorrhoea have been seen in this hospital in the last few years, and a further paper on these cases is in preparation. They differ from the present case in many features. They give histories of much longer duration, the weight loss is more pronounced, and anaemia varies from hypochromic microcytic to hyperchromic macrocytic. Stools are pale and greasy, and have a persistently high total fat and split-fat content. The tongue is smooth and may show aphthous ulceration. The blood pressure is variable, depending upon the age of the patient, but the systolic was not below 100 mm. Hg except terminally or when the patient was collapsed, and then there was no response to desoxycortone acetate. A high-potassium low-sodium diet with added potassium chloride did not produce an exacerbation of the condition or a fall in blood pressure. The blood calcium is usually low in idiopathic steatorrhoea and tetany is frequent, but there may be a hypercalcaemia in Addison's disease (Loeb, 1940). In the case under discussion the blood calcium was 10.6 mg. per 100 c.cm. Pigmentation of skin was variable, but was not present on mucosae. Test meals usually showed an achlorhydria. Oedema of the limbs, in many cases massive, was often present on admission before the onset of any treatment.

Discussion

Addison's disease is suggested by the history, pigmentation of skin and mucosae, ionic changes in the blood, low blood pressure, melanuria, and response to desoxycortone acetate—and also the fall in blood pressure and onset of vomiting, diarrhoea, and vertigo, on deliberately withholding the desoxycortone acetate (see progress notes). The marked improvement with desoxycortone acetate suggests that the entire clinical picture is a single entity.

In Addison's disease the sodium loss leads to dehydration, haemoconcentration, diminished glomerular filtration, and an increase in the blood urea. Increased protein destruction occurs in dehydration (Black, 1942), and this contributes to the raised blood urea. The normal blood urea figures in this patient suggest adequate glomerular filtration and a normal blood volume.

It was noticed that the urine was dark in colour, particularly after it had been standing for 24 hours. When at the end of April the blood pressure fell the urine became black with pigment identified as melanin. The urine eventually became paler, though its colour fluctuated considerably. The increased alkalinity of the urine on standing had resulted in the rapid oxidation of melanogen to melanin. At this time, too, it was noticed that the stools had a very foul odour, were of enormous volume, and looked like the stools of idiopathic steatorrhoea, being unformed and very greasy. In the cold they set like cooling fat; they were, however, dark and not clay-coloured. When the blood pressure rose the stools diminished in size and became almost normal in appearance, though now and again, with a bout of "general malaise" but no obvious fall in the blood pressure, blood sodium, or blood chloride ions, they would revert to a "steatorrhoeic" state. In three fat estimations of these stools—the third during a remission—the total fat was 48%, 73%, and 21% respectively, and in every instance over 75% was split fat.

Fat Analysis: % of Dried Faeces

			During Remission produced by Desoxycortone Acetate
Neutral unsplit fat	6·4%	16·6%	1·6%
Free fatty acids	32·1%	24·4%	14·2%
Soaps	9·1%	32·2%	5·0%
Total fat	47·6%	73·2%	20·8%
% of faecal fat: (a) Unsplit ..	13·4%	22·7%	7·7%
" " (b) Split ..	86·6%	77·3%	92·3%

Steatorrhoea, with or without diarrhoea, has been demonstrated in Addison's disease (Zondek, 1944) and also in experimental adrenal insufficiency (Verzar and McDougall, 1936). It is suggested that the dark colour of the stools might in this patient be due to melanin.

Abnormality of cell permeability would account for the failure in fat absorption, the split fat indicating that the enzymes of the bowel were functioning normally. In adrenalectomized animals there is a marked delay in the rate of absorption of sodium, potassium, and chloride ions from the ileum (Hadfield and Garrod, 1942), and the production of a stool comparable to that in chronic jejuno-ileal insufficiency would be understandable. Actual atrophy of the alimentary canal comparable to that observed in idiopathic steatorrhoea appears to be uncommon in Addison's disease (Guttman, 1930).

A glucose-tolerance test showed a low curve but a normal fasting sugar. An intravenous glucose-tolerance test to find whether this apparent increased glucose tolerance was really due to poor intestinal absorption was not done. However, it is

known that in Addison's disease there is a greatly increased glucose tolerance due to unbalanced action of insulin, and that this state of hypoglycaemia is not corrected by injections of desoxycortone acetate.

It is stated by some authorities that "anaemia may occur in Addison's disease but is not specific" (Whitby and Britton, 1942). According to Goldzieher (1939), "anaemia, originally mentioned as a feature by Addison, is actually not a symptom of the disease. The red cell count is not infrequently increased, and the haemoglobin higher, as the result of the inspissation of the blood." Other sources (Leyton and Simpson, 1936–41) tentatively suggest that the adrenal cortical hormones might be needed for adequate haemopoiesis, but still favour failure of iron absorption, possibly due to achlorhydria, as the more likely cause.

Brown and Roth (1925) found definite anaemia in one of 17 cases of Addison's disease they observed. It showed haemoglobin 50% and 53% (Dare scale) and R.B.C. 2,960,000 and 3,280,000. The patient died three days after admission. They quote a case observed by Neumann with a red cell count of 1,120,000. The lowest figures given by Goldzieher (1939) are Hb 67%, R.B.C. 3,450,000; and by Rowntree and Snell (1931) Hb 30% and 39% (Dare scale), R.B.C. 1.5 and 1.9 millions.

The rapid response to desoxycortone acetate in the present case suggests that this substance is here essential for the normal formation of red cells. That intestinal insufficiency, as indicated by the high fat content of the stools, was not the cause of the anaemia is shown by the persistent colour index of 1.0 to 1.1 (excepting one reading of 1.3); this argues against the absence of the pernicious anaemia haemopoietic factor being the primary cause, as also does the absence of therapeutic response to liver. The normal colour index suggests that the absence of iron is not the primary cause. As there was no achlorhydria, this too could not have participated in the causation of the anaemia. Indirect evidence of the specific action of the cortical hormones in haemopoiesis is that polycythaemia occurs in suprarenal cortical excess, due to cortical hyperplasia, adenoma, or carcinoma.

It is probable, therefore, that in this case of Addison's disease the anaemia is due to the direct specific effect on the bone marrow of an absence of suprarenal cortical hormone. This may often occur in Addison's disease, but, being slight, may be hidden. In addition, diminished bowel absorption may add the features of iron-, or "liver-," deficiency anaemia. To these factors must be added the effect of dehydration (probably absent in this case), acidosis, and ionic change on the individual and total red cell volume. A variable blood picture may thus result. A normocytic anaemia of this degree of severity will, in view of the failure of response to all the usual haematinics, resemble "idiopathic aplastic anaemia."

The presence of "one primitive megaloblast" in the earliest blood count does not make the diagnosis a macrocytic anaemia, as none have been seen since then. The 8% eosinophils on first admission to this hospital may have been due to the injections of liver before admission, though eosinophilia has been reported in Addison's disease by Zondek (1944).

Melanuria is rare in Addison's disease, and it is not more common or more pronounced in cases of the disease with deeper pigmentation. It is said to occur in severe cases (Karsner, 1938). This suggests that cell permeability is not dependent upon the same cortical hormone the absence of which results in pigmentation. A severe alteration in cellular permeability may therefore occur with slight or no pigmentation, and vice versa. Non-pigmented cases of Addison's disease have been described by Conybeare and Millis (1924) and White and James (1927). A severe alteration in cellular permeability might result in the liberation of melanin, and its immediate precursor melanogen, into the circulation; the melanin is then reduced to melanogen in the serum (Karsner, 1938), and excreted in the urine, where it is reoxidized to melanin.

In the present instance there was no direct relation between exacerbation of the syndrome and of the stomatitis, which, however, improved when the clinical condition responded to desoxycortone acetate.

Methods Used

Faecal Fats.—The Soxhlet extraction method, substantially the same as that of Holt, Courtney, and Fales, and referred to in Harrison's *Chemical Methods in Clinical Medicine*, 2nd edition, pp. 469 and 470.

Blood Chlorides.—Whitehorn's method (*J. biol. Chem.*, 1920–1, **45**, 449).

Serum Sodium.—Modification of method of McCance and Shipp described in Harrison's *Chemical Methods in Clinical Medicine*, pp. 379 and 380.

Serum Potassium.—Method described by Jacobs and Hoffman (*J. biol. Chem.*, 1931, **93**, 685).

The serum sodium and serum potassium methods are colorimetric methods, and a "Spekker" absorptiometer has been used in these estimations.

Summary

A case simulating Addison's disease with severe normocytic normochromic anaemia, steatorrhoea, and melanuria, and its treatment, are described.

A tentative explanation of the underlying mechanism of the syndrome anaemia, steatorrhoea, and melanuria is put forward.

The differential diagnosis is discussed.

The relevant literature is reviewed.

I wish to thank Dr. Osman for his kind help and advice in treating this case and writing this paper; Dr. Jones, of the County Laboratory, Maidstone, and Dr. Taylor and Mr. Rogers, of the Pathological Department, County Hospital, Pembury, for the haematological and biochemical investigations. Also Dr. Grasby, medical superintendent, and Dr. Ponder, County Medical Officer, for permission to publish this report; the military authorities for sending data obtained in a military hospital; and the medical superintendent of the West Glamorgan County Hospital, Neath.

BIBLIOGRAPHY

Addison, T. (1855). *The Constitutional and Local Effects of Disease of the Suprarenal Capsules*, London.
Bennett, T. I., Hunter, D., and Vaughan, J. M. (1932). *Quart. J. Med.*, n.s. **1**, 603.
Black, D. A. K. (1942). Ibid., n.s., **11**, 77.
Brown, G. E., and Roth, G. M. (1925). *Amer. J. med. Sci.*, **169**, 47.
Conybeare, J. J., and Millis, G. C. (1924). *Guy's Hosp. Rep.*, **74**, 369.
Eisenberg, A. A., and Wallerstein, H. (1932). *Arch. Path.*, **14**, 818.
Gloor, H. U. (1929–30). *Folia Haematol. Lpz.*, **39**, 373.
Glynn, L. E., and Rosenheim, M. L. (1938). *J. Path. Bact.*, **47**, 285.
Goldzieher, M. A. (1939). *The Endocrine Glands*, New York.
Guttman, P. H. (1930). *Arch. Path.*, **10**, 742, 895.
Hadfield, G., and Garrod, L. P. (1942). *Recent Advances in Pathology*, London.
Holmes, W. H., and Starr, P. (1929). *J. Amer. med. Ass.*, **92**, 975.
Karsner, H. T. (1938). *Human Pathology*, 5th ed., pp. 30 and 31, Philadelphia.
Leyton, O. (1939). In Price's *Text Book of Practice of Medicine*, London.
—— and Simpson, S. L. (1936–41). In *British Encyclopaedia of Medical Practice*, **1**, 232, London.
Loeb, R. F. (1932). *Science*, **76**, 420.
—— (1940). *Bull. N.Y. Acad. Med.*, **16**, 347.
Rowntree, L. G., and Snell, A. M. (1931). *A Clinical Study of Addison's Disease*, Philadelphia.
Verzar, F., and McDougall, E. J. (1936). *Absorption from the Intestine*, p. 180, London.
Whitby, L. E. H., and Britton, C. J. C. (1942). *Disorders of the Blood*, London.
White, E. C., and James, W. F. (1927). *U.S. Nav. med. Bull.*, **25**, 122.
Zondek, H. (1944). *The Diseases of the Endocrine Glands*, London.

THREE CASES OF CLOSED INTRA-ABDOMINAL INJURY

BY

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Cases of visceral injury resulting from blunt injuries to the abdomen are interesting clinically. The exact mechanisms by which the lesions are produced have occasioned some discussion. The following are case notes of three such injuries produced by three different types of trauma. All three cases were seen within the latter six months of 1944.

Case 1: Propeller Accident; Ruptured Jejunum

The patient—a young man of the Fleet Air Arm—gave a history of having been struck in the abdomen by the blades of a propeller, against which he was leaning when the engine of the aircraft was started. The only visible external injuries were abrasions in the right groin and over the lower half of the sternum. At first he appeared to have no serious internal injuries, and his general condition was good. He was admitted to R.A.F. sick quarters, where the medical officer wisely put him to bed and made half-hourly records of his pulse rate and blood-pressure readings. His pulse rate continued to be normal and constant, but he vomited twice. In view of his abdominal symptoms, the M.O. was not happy about him.

When I first saw the patient there were guarding and tenderness of the upper abdomen, but peristalsis was audible through the

stethoscope. In view of this observation, his general condition, the pulse rate, and blood-pressure readings, it was thought at first that his pain and guarding were probably not due to a ruptured jejunum. However, a "straight" radiograph of his abdomen (taken with a portable machine while the patient was sitting erect) showed free gas under both cupolas of the diaphragm, and clinched the diagnosis. Conditions prevailing at the time prevented his admission to our mobile hospital, and he was transferred to the Royal Victoria and West Hants Hospital.

Laparotomy, performed by Mr. Markaby, showed a laceration about the size of a threepenny-bit in the jejunum, 10 in. from the duodeno-jejunal flexure. Prolapsed mucosa had effectively plugged the laceration. There was a small quantity of free fluid in the peritoneal cavity, and some local peritonitic reaction, with flakes of lymph round the site of laceration. The small gut was dilated proximally. Distally it was empty. The laceration was closed with a purse-string suture, reinforced with a row of Lembert sutures.

Mr. Markaby, in a letter, says that recovery was uneventful, and that the patient was discharged from hospital three weeks later. Up to the time of operation (16 hours after the accident) the pulse rate had been constant and the blood pressure had remained at 135/75 mm. Hg.

Case II: Crush Injury; Ruptured Stomach

This patient was crushed between two heavy lorries, the bumper of the moving vehicle striking him in the epigastrium. His abdomen was compressed with considerable force in an antero-posterior direction. Severe abdominal pain and distress immediately followed the injury. He was admitted to our hospital two hours after the accident.

On examination he was evidently in great pain. His whole abdomen was rigid. Resuscitative measures were begun forthwith, and these were continued during the operation. The abdomen was opened through a generous left upper paramedian incision. The left upper rectus abdominis was found to be partially ruptured. The peritoneal cavity contained blood and food debris in quantity. The stomach was ruptured 3 in. from the pylorus. The rent was about 7 in. long and ran at right-angles to the long axis of the viscus, extending from the anterior surface across the greater curvature on to the posterior surface. The transverse mesocolon was split in a vertical direction from its colonic attachment to near its root. The lesser sac was thus freely opened and contained blood and food debris. The colon was not injured and its blood supply not impaired. There was an extensive retroperitoneal haematoma in the region of the pancreas.

No other injuries were found. The rents in the stomach and mesocolon were repaired. As much as possible of the blood and food debris was removed from the peritoneal cavity. The retroperitoneal haematoma was left untouched, and the abdomen was closed without drainage. Gastric suction through a nasal tube was begun immediately. The intravenous drip was kept going with glucose-saline. Penicillin, sulphathiazole, and anti-gas-gangrene therapy was started as a prophylactic measure against infection of the retroperitoneal tissues.

The patient's condition next morning was satisfactory. He said that he was in no pain but felt thirsty. He had passed urine. Twenty-four hours after the operation, however, signs of cardio-respiratory failure set in relatively suddenly, and he died four hours from the onset of symptoms. During these four hours his colour remained fairly good and his extremities were not cold. His pulse was rapid and weak. His respiration became rapid and gasping, but there was no "bubbling" in the lungs and he did not complain of pain in the chest.

Post-mortem Examination.—There was a quantity of blood-stained fluid in the peritoneal cavity. The suture lines were sound. There was an extensive retroperitoneal haematoma extending from the region of the pancreas along the line of the great vessels to the pelvic brim. The quantity of blood lost into the haematoma was not sufficient to account for death. There was considerable haemorrhage around and a little haemorrhage into the pancreas. No areas of fat necrosis were observed. The kidneys were very congested, but were unruptured. There were no injuries to the spleen, liver, or intestines. The suprarenals showed no gross abnormality. There was a tear in the internal coats of the abdominal aorta, but this had not been the source of the haematoma. The heart appeared normal. Only post-mortem clot was found in the main branches of the pulmonary artery. The lungs showed no gross abnormality. The diaphragm was not ruptured.

Case III: Kick on Left Lower Ribs; Ruptured Spleen

An airman aged 23 was kicked in the left lower ribs while playing football. He was "winded," but after a few minutes continued with the game. Later he returned to his unit by motor coach. He noticed nothing much amiss, and after a good night's sleep arose as usual next morning. At 11 a.m.—he had been injured at 4.30 p.m. the previous day—he was straining at stool, when he was seized with acute pain in the left hypochondrium. He also noticed pain in his left shoulder. He was emphatic that these pains had not previously been experienced. His unit medical officer observed him for a short time and sent him in as a case of ? ruptured spleen.

On admission his pulse rate was 80 a minute and blood pressure 120/70. His haemoglobin was 90%.. He was sweating and in pain. On examination he was tender over the whole abdomen, but especially so in the left hypochondrium and left loin. There was no rigidity. The area of splenic dullness was increased and there was shifting dullness. When the patient was turned on one side he complained of abdominal pain on that side. He was tender in the pelvic pouch. The urine was normal. Blood transfusion was started, and was continued during the operation. The abdomen was opened through an adequate upper left paramedian incision. The peritoneal cavity contained a quantity of free blood. The spleen was surrounded by a mass of blood clot and presented two large lacerations on its convex surface and on its upper and anterior border. Splenectomy was performed, and after removing the clot and free blood so far as was possible the abdomen was closed without drainage. The temperature did not settle for 10 days, but the patient felt and looked fit. Fourteen days after his operation the white cells numbered 21,000 per c.mm. (neutrophils 71%, lymphocytes 23%, monocytes 3%, eosinophils 1%, basophils 2%). He was evacuated to England, and I have no further information regarding him. The patient had been stationed in the Middle East for two years, but had never had malaria or any other illness. Histological examination of the spleen showed no pathology apart from the lacerations.

Discussion

In Case I the jejunum was ruptured as the result of a sharp glancing blow on the relaxed abdomen. The lesion produced was a small partial tear 10 in. from the duodeno-jejunal flexure. The appearance of the bowel and the near-by tissues was not such as to suggest that the bowel had been crushed against the spine by the blade of the propeller (personal observation). If this had been the mechanism responsible then one would have expected to find considerable bruising of all the tissues so forcibly compressed, and not only an isolated tear of the small gut.

The site of jejunal tears in cases of "subcutaneous" injuries is reported to be fairly constant ("near the fixed portions of the gut"). If the rupture is due to a localized crushing of the bowel, then it must follow that only those injuries in which the force is applied to these sites produce rupture, and in cases of blows elsewhere on the abdomen rupture does not occur. Can this view be accepted? (At present I have not access to the relevant literature.)

In Case II the force was of a powerful crushing nature, relatively slowly applied. Here it was the thick-walled full stomach which was ruptured, and there was extensive bruising of the tissues on the posterior abdominal wall, but no rupture of the other viscera and, in spite of the great compression of the abdomen, no rupture of the diaphragm.

In Case III the force was a sudden kick on the elastic ribs overlying the spleen. The ribs were not fractured, but they transmitted the sudden force to the organ, which was ruptured in two places. The mechanism here would seem to be the creation of a pressure wave in the semi-fluid pulp of the spleen and its contained blood, sufficient to burst open the capsule of the viscus. The length of the interval between the injury and the first onset of symptoms was striking.

In Case I the absence of any marked constitutional symptoms even 16 hours after the bowel had been ruptured was interesting.

For permission to publish these case notes I am indebted to Air Marshal Sir Harold Whittingham, Director-General Medical Services, Royal Air Force, and to Wing Commander H. F. Harvey, Officer Commanding our Mobile Field Hospital.

I wish to thank Air Vice-Marshal Stanford Cade, Consultant in Surgery to the Royal Air Force, for much help and encouragement.

W. M. Johnson and O. T. Davis (*South. med. J.*, 1945, **38**, 373), who record their observations on 22 cases of acute pancreatitis, come to the following conclusions: (1) Pancreatitis is far commoner than is generally thought. (2) Pancreatitis can often be suspected clinically, and can be diagnosed almost invariably by the serum amylase test properly performed. (3) The aetiology of pancreatitis is still questionable; it may be due to a number of factors. (4) The fact that pancreatitis is far more often a medical than a surgical condition makes its recognition exceedingly important.

THE RISKS OF GASTROSCOPY WITH THE FLEXIBLE GASTROSCOPE

BY

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When Wolf and Schindler devised their flexible gastroscope they called it an "entirely safe" instrument (Schindler, 1932). They claimed there was no risk of lower oesophageal perforation, which had been the chief disadvantage of the older rigid gastroscopes. This claim appears to have been justified by later experience, and, to our knowledge, no instance of lower oesophageal injury with the flexible gastroscope has been reported. Other accidents, however, have occasionally occurred. Schindler (1940) published the results of a survey of 22,351 gastroscopies performed by many gastroscopists of varying experience in America. In this large series only one death had occurred after gastroscopy. This was due to hypopharyngeal perforation of the oesophagus. There were also eight instances of gastric and one of jejunal perforation without fatality. Later Schiff and Shapiro (1941) reported a further non-fatal case of gastric perforation. These perforations were attributed to the use of the sponge-rubber tip to the instrument, and no further cases of gastric perforation have been reported since the rubber finger-tip and plain metal end to the instrument have come into general use.

Since this large series was published three further cases of hypopharyngeal perforation with the flexible gastroscope have been reported—Paul and Lage (1943), Touroff (1941), and White (1941). One of these was fatal. So far as we are aware these are the only cases of a dangerous sequel to the passage of the flexible gastroscope that have been published.

Personal Experience with the Gastroscope

In a combined experience of 2,800 gastroscopies, about half of which were done with the Hermon Taylor gastroscope, we have had two fatalities attributable to gastroscopy and four cases that gave rise to some anxiety. We consider it right to publish details of these cases.

Case 1 (Central Middlesex County Hospital).—A woman aged 59. Admitted with diagnosis of scurvy. Considerable improvement after six weeks' treatment with full diet and ascorbic acid, and all cutaneous haemorrhages had disappeared. Gastroscopy was carried out to exclude malignant disease of the stomach. The Hermon Taylor gastroscope was used with a rubber finger-tip. The instrument was introduced as far as the cardia without any difficulty, but the patient had a slight kyphosis and the instrument was held up here. It was then passed on with slight difficulty by active flexion of the end of the instrument. An atrophic gastric mucosa was seen. The patient did not complain of unusual discomfort at the time, but was rather drowsy as a result of premedication with morphine gr. 1/6 and hyoscine gr. 1/150. She remained drowsy and unwell, and that evening surgical emphysema of the neck was noticed and the pulse rose to 130. She was treated with rectal fluids and sulphapyridine by mouth. Her general condition remained poor and swallowing was difficult and painful. An empyema developed on the right side and she died on the sixth day after gastroscopy. At necropsy a longitudinal tear, 1/2 in. long, was found in the posterior wall of the oesophagus, 2 in. from its upper end.

Case 2 (at a South London Hospital).—A woman aged 59. Admitted with diagnosis of gastric ulcer. The patient had been gastroscoped uneventfully three weeks previously by another gastroscopist, using the Wolf-Schindler instrument with a rubber finger-tip. On the present occasion the Hermon Taylor gastroscope with a plain metal end was used. The instrument was passed easily as far as the hypopharynx, where it was held up and did not slip on into the oesophagus when the patient swallowed. Slight pressure was applied, and the instrument passed on about 1 in. The patient then complained of pain localized to the upper thoracic spine. On looking through the gastroscope after one bulbful of air had been injected, a mass of froth was seen instead of oesophageal mucosa. The instrument was immediately withdrawn. Skiagrams of the neck showed surgical emphysema, which became obvious clinically shortly afterwards. The patient was treated with intravenous fluids and sulphathiazole. She remained very ill, with fever and dyspnoea, but without pain after the first 12 hours. She developed a right-sided empyema and died 12 days later. At necropsy a longitudinal perforation of the posterior wall of the oesophagus was found at the level of the cricoid cartilage, with suppurative mediastinitis and extension of the infection to the right pleural space. In the stomach there was a carcinomatous ulcer with secondary lymphatic deposits.

Both these fatalities may be said to be due to an error of judgment. In the first case gastroscopy was probably contraindicated, since the patient's tissues might have been expected to be in a fragile state as a result of her recent scurvy. No difficulty was experienced in getting the instrument past the site of the oesophageal tear. It is possible that the tear was the result of stretching the oesophagus by the rigid part of the instrument, since the patient had a slight kyphosis. In the second case extra pressure was exerted when the tip of the instrument was lying in the hypopharynx. When the patient swallows, the instrument should always slip on easily into the oesophagus, and it is clearly dangerous to apply any pressure if it does not do so.

Case 3 (at a North-East London Hospital).—A woman aged 62. Diagnosis: rheumatoid arthritis; dyspepsia with achlorhydria, but without radiological abnormality in stomach or duodenum. Gastroscopy was carried out to exclude malignant disease of the stomach, and was unusually easy. The Hermon Taylor gastroscope was introduced without any difficulty, and afterwards the patient sat up and commented on the complete absence of any discomfort. The gastric mucosa was atrophic, with erosions and the scar of a healed ulcer. The patient remained well for the next 12 hours, when she developed a slight sore throat and a little fever. This soreness increased, and 24 hours after gastroscopy she had severe substernal pain with dysphagia. Very slight surgical emphysema was detected in the neck and confirmed by skiagrams. She was treated with rectal fluids and intravenous sulphathiazole, and after a febrile course of one week made an uninterrupted recovery. We thought that she might have had an oesophagitis due to an allergic sensitivity either to the rubber sheath of the gastroscope (as in respirator dermatitis) or to the anethaine which had been used as a local analgesic, but skin tests with both these substances gave negative results. In view of the surgical emphysema it must be concluded that the patient had had a small oesophageal abrasion with a subsequent oesophagitis, but it is remarkable that such an abrasion could have been inflicted without any difficulty, pain, or even discomfort at the time of instrumentation.

We have had 3 other cases in which severe retrosternal pain and fever followed gastroscopy, without the development of surgical emphysema. These resolved uneventfully after 7 to 10 days' conservative treatment.

In addition to these cases of our own we have heard of five other fatal and two non-fatal cases of hypopharyngeal perforation of the oesophagus by the flexible gastroscope during the past two years. The Hermon Taylor gastroscope was used in five of the seven fatal cases.

Comment

Gastroscopy with the flexible gastroscope is proving to be an indispensable means of diagnosis of diseases of the stomach, and is rapidly becoming a routine procedure in almost every large hospital in the country. It is inevitable that many gastroscopies should be performed by inexperienced gastroscopists. We believe that some beginners have a false sense of security in their use of the instrument, based on the rarity of reported accidents. Both of our fatal cases were the result of overconfidence in the safety of the flexible gastroscope, which led, in Case 1, to the gastroscopy of an unsuitable subject, and in Case 2 to slight pressure being used to overcome resistance during the passage of the instrument. With our present realization of the risks of gastroscopy both these fatalities would probably have been avoided.

It is important that all users of the flexible gastroscope should realize that there is a slight but definite risk associated with the passage of the instrument, and that in this, as in all endoscopic methods, the greatest circumspection is needed. The main risk appears to be that of perforation of the upper part of the oesophagus and the hypopharynx. Both of our fatal cases, and three of our four cases of severe oesophagitis, occurred in elderly women, which might suggest that such patients carry a special risk; but Touroff's case was in a man aged 40, White's case was in a man aged 58, and two of the unreported cases were in young men. Schindler (1943) has criticized the Hermon Taylor gastroscope, which was used in both of our fatal cases, because of its long rigid portion, which might lead to dangerous stretching of the lower end of the oesophagus as it turns to the left just above the cardia. No accident of this kind has come to

our knowledge. The flexible part of the Hermon Taylor gastroscope is 2 mm. wider (i.e., 14 mm. wide) and is appreciably stiffer than the corresponding part of the original Wolf-Schindler instrument. It is possible that extra care is necessary for its passage into the oesophagus. The Hermon Taylor model gives a much better view of the stomach than can be obtained with the Wolf-Schindler instrument, and we consider it is the gastroscope of choice provided it is passed with care.

Summary

Two cases of fatal hypopharyngeal perforation of the oesophagus with the flexible gastroscope are reported.

This accident appears to be the most serious risk of gastroscopy with the flexible gastroscope, and is not so infrequent as the rarity of reported cases suggests.

It is important that inexperienced gastroscopists should appreciate that caution is necessary in the passage of the flexible gastroscope.

REFERENCES

Paul, W. D., and Lage, R. H. (1943). *J. Amer. med. Ass.*, **122**, 596.
Schiff, L., and Shapiro, N. (1941). *Amer. J. digest. Dis.*, **8**, 260.
Schindler, R. (1932). *Münch. med. Wschr.*, **79**, 1268.
—— (1940). *Amer. J. digest. Dis.*, **7**, 293.
—— (1943). *Bull. Amer. Gastroscopic Club*, **1**, 7.
Touroff, A. S. W. (1941). *Ann. Surg.*, **114**, 369.
White, J. D. (1941). *Brit. J. Radiol.*, **14**, 364.

TREATMENT OF DENUDED EXTERNAL TABLE OF THE SKULL

BY

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This note describes a method of treatment of areas of bare external table exposed in deep burns and extensive injuries of the skull. It has been found satisfactory in the three cases in which it has been used. All these cases had complete loss of scalp and pericranium over the exposed bone, which was dry and eburnated.

The classic treatment for this condition is to make burr-holes through the exposed bone into diploe; to await the appearance of granulations from the burr-holes and their coalescence across the intervening outer table; and then, when the layer of granulations is complete, to cover it by a free graft. The particular disadvantage of this method is the delay between the operation to expose patches of diploe and final healing. The granulations may be slow to appear and slower to coalesce completely; 6 to 12 weeks may elapse between the initial operation and final healing of the free graft. It is clear that if skin can be made to stick consistently on freshly exposed diploe much time can be saved.

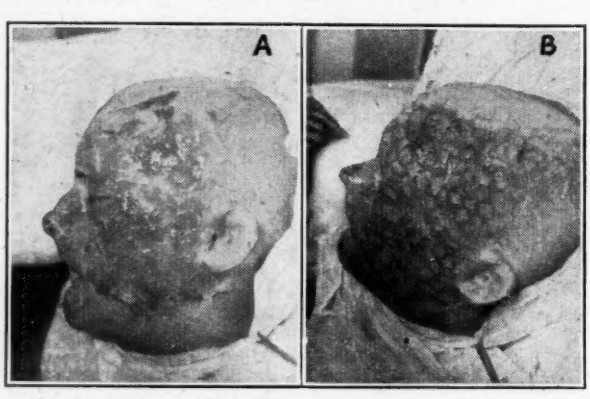

FIG. 1, Case 1.—(A) Contact burn destroying skin of face, nose, and forehead, and exposing 8 by 6 cm. of the external table of the frontal bone. (B) On the 24th day the external table was removed and the exposed diploe, together with face, forehead, and nose, was covered by thin patch grafts. Healing was complete six days later.

During the Cassino battle a case of direct-contact burn was admitted with destruction of part of the scalp, the forehead, one cheek, and half the nose. After clearance of sloughs, 8 by 6 cm. of frontal outer table was exposed. On the 24th day primary re-surfacing by patches was undertaken. These were closely packed over the soft parts, and it was decided to cover the bare skull at the same operation. The exposed outer table was totally removed and thin split skin applied directly to the diploe. The grafts took completely, and the whole skull, together with forehead, cheek, and nose, was healed by the 30th day. This patient has been under observation for 8 months during the late repair of his nose and cheek. The skin over his diploe has remained stable; the depression in the skull caused by removal of the outer table is slight and not easily noticeable; palpation of the area suggests a thin deposit of subcutaneous tissue between graft and diploe.

Technical Points

Burr-holes are made through the exposed outer table into diploe and connected by a groove made by a gouge. Small areas of outer table are thus enclosed and taken off with an osteotome. Near the sagittal sinus arachnoidal granulations might be lacerated; if they were, the bleeding could be easily controlled with a small muscle graft. The intervening bone between the burr-holes and back to the margin of the granulations is completely removed. When there is comminution of the outer table near the margin these flakes are removed together with overlying granulations. Haemostasis is obtained by pressure with hot packs. Wax was used in one case without apparent prejudice to the graft.

The cover is provided by thin patch grafts, 1 cm. square, packed close and spread on grease-proof paper. A well-incised thin sheet stuck on with sano extracts or gum acacia would probably be almost as certain to take. The grafts are fixed by tulle gras, P.F. wool, wool, and crêpe. The dressings are taken down at the fourth day and repeated daily with a careful technique. Crêpe pressure is maintained until final healing.

FIG. 2, Case 1.—The appearance of the skull eight months later. There is a shallow depression where the external table was removed. The diploe is covered by skin, which has been stable during exposure to Mediterranean sun and to cold. (The nose has been repaired by a forehead rhinoplasty, and the patch grafts on cheek and forehead replaced by thick dermatome sheets from the abdomen.)

Results

The accompanying Table shows that exposures of the outer table of 8 by 6, 12 by 10, and 7 by 6 cm. were healed in 6, 10, and 20 days respectively after removal of the whole of the exposed external table and immediate application of free grafts. The delay in healing in the mine wound (20 days after operation) was attributed to the presence of osteitis in the external table at margins of the defect.

Table showing Type of Case treated

Case	Site and Size	Cause	Day Grafted	Day Healed	Comment
1	Frontal, 8 by 6 cm. (Figs. 1 and 2)	Contact burn	24	30	Soundly healed throughout 8 months' observation
2	Frontal, 7 by 6 cm.	Mine	67	87	Extensive dirty multiple mine wounds. Gravely ill for many weeks before operation. Some osteitis of comminuted exposed external table. Case treated with Major Tutton, R.A.M.C.
3	Parietal occipital, 12 by 10 cm.	Electric burn	60	70	Had over 1,000 sq. cm. of full-thickness skin-loss of back also re-surfaced with patch grafts. Skull treated by Capts. Grossman and Jepson, R.A.M.C.

PERSPEX IN ORTHOPAEDICS

BY

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The suitability of plastics in orthopaedics has been under investigation at the Royal National Orthopaedic Hospital for some months, and this is an interim report on the work so far carried out. Methods previously used have involved the making of a positive from a negative plaster cast, and to this positive, perspex has been moulded. In order to reduce the time involved in the preparation of positive casts, a method was sought which eliminated this procedure. It has been found quite easy to make small moulded splints direct from the negative by hand. For large splints, however, the hand method was not adequate, and an apparatus was designed which could accurately mould the material to the large negative cast. For this type of moulding compressed air was found the most suitable means of applying pressure to the material.

Advantages of Perspex.—(1) Easy moulding by heat. (2) Light weight. (3) Durability. (4) Light-transparent, including ultra-violet band. (5) Permeable to *x* rays. (6) Cleanliness. (7) Waterproof—not affected by urine, etc. (8) Unbreakable—within limits. (9) Non-irritant to skin. (10) Reclaimable—material can be used again after reheating.

Disadvantage of Perspex.—Non-porous (see later).

It will be seen that this material offers many advantages over plaster-of-Paris, inasmuch as its durability, cleanliness, and light weight are features which have long been sought when patients are being treated for considerable lengths of time in orthopaedic splints. A patient can be nursed adequately, cleanly, and comfortably in a perspex shell without the disadvantages of softening by urine, reinfection of sinuses or wounds, and distortion or collapse of the shell, which are so often found when plaster-of-Paris shells are used. Moreover, for patients who cannot be moved—e.g., fractured spines—skiagrams can be taken *in situ*.

Method for Making Small Splints.—Suitably thick material (1/16 to 1/8 in.) of appropriate size is heated, pressed by hand into the negative cast (using asbestos gloves), and held until cool. The splint is trimmed with an electric saw, and the edges smoothed before fitting to the patient.

Method for Making Large Splints (Including Anterior and Posterior Shells).—A plaster cast of the part required, with 2-in. to 3-in. flanges on each side, is made (Fig. 1), and this is then placed in the lid of the moulding apparatus (Figs. 2 and 3).

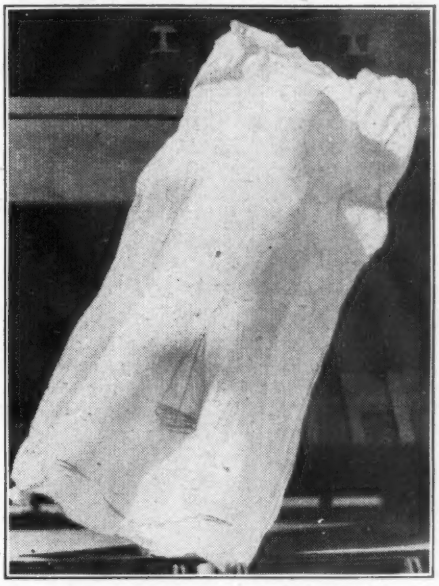

FIG. 1.—Plaster cast for perspex shell with 4-in. flange.

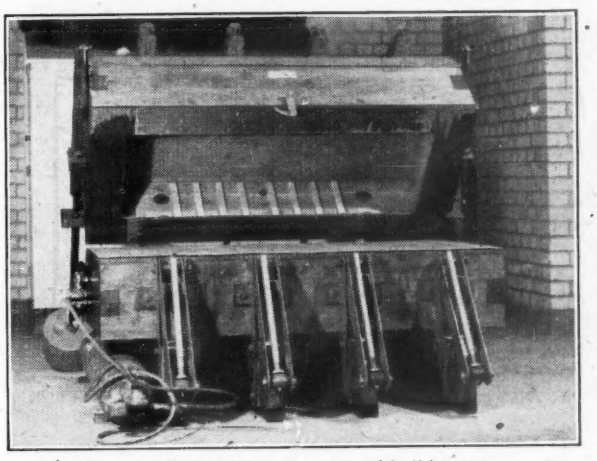

FIG. 2.—Moulding apparatus with lid open.

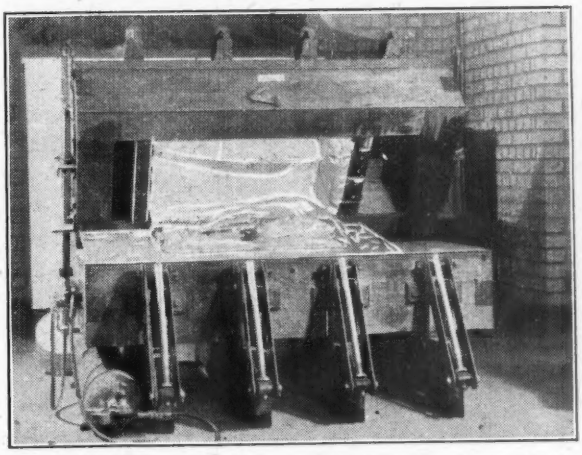

FIG. 3.—Moulding apparatus opened after perspex mould has been blown. Plaster cast seen in lid and mould lying on base.

The remainder of the compartment is packed with sandbags (Fig. 4). The perspex sheet (1/8 to 3/16 in. thick), having been previously softened in an infra-red oven, is laid on the base of the apparatus and the lid clamped down. Air pressure is

applied (15 to 20 lb. per sq. in.), which forces the perspex into accurate contact with the cast. The air pressure is maintained for a short while to allow the perspex to cool, and the perspex mould is then removed from the apparatus (Fig. 3).

Mounting of Perspex Shells.—These are mounted in standard adjustable frames which, when the shell is discarded, can be used again. After cutting out the apertures for limb and toilet requirements the mould should be suspended from the frame

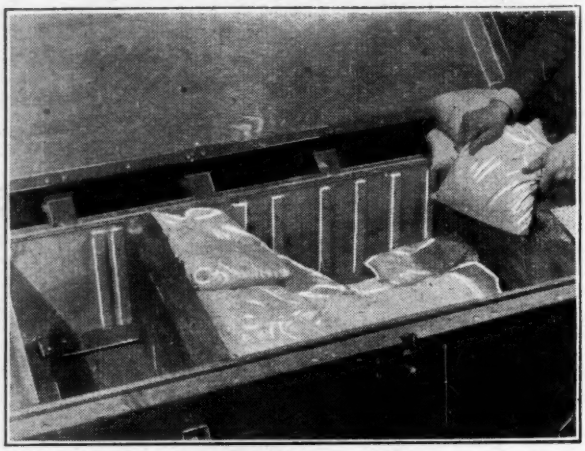

FIG. 4.—Sandbags being packed over plaster cast in lid of moulding apparatus.

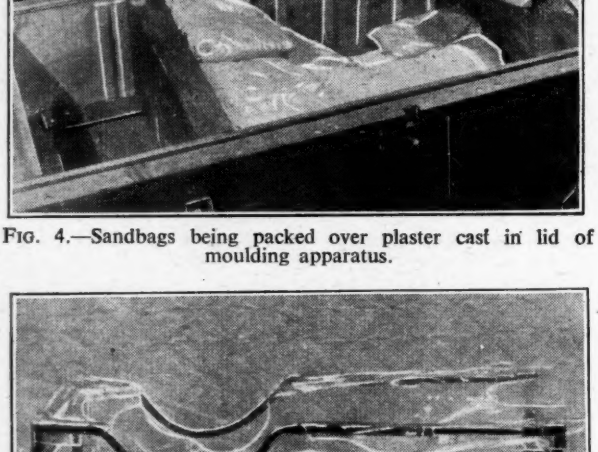

FIG. 5.—Perspex shell mounted on standard adjustable frame, showing suspension of shell.

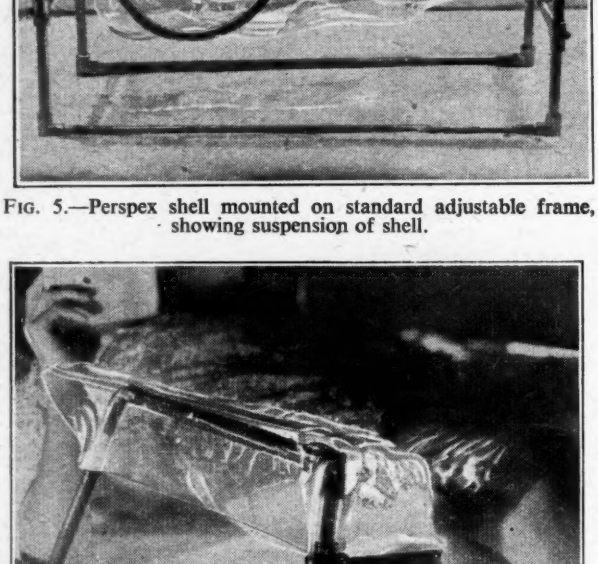

FIG. 6.—Adult patient being treated in perspex shell.

by turning the remaining part of the flanges over the upper bars (Figs. 5 and 6).

Observation.—It might seem that the method of pressing perspex into negative casts will reduce the diameter of the splint by double the thickness of the material used. It has been found that, while this is theoretically the case, in fact the "spring" in the material largely compensates, and a snugness of fit is obtained which is an improvement when compared with plaster-of-Paris casts.

Some Notes on Technique in Handling Perspex

1. The disadvantage of the material being non-porous can be overcome by drilling small ventilation holes in any area where moisture is likely to accumulate.

2. Cutting.—A high-speed saw is essential, otherwise the material is liable to fracture. Care must be taken that no saw cuts are left in the edge of the finished splint, otherwise stresses will cause such cuts to run into cracks. When an area has to be removed from the body of the splint large-diameter drill-holes should first be made at the apices of the intended meeting-point of the saw cuts.

3. Edges.—After cutting, all edges should be smoothed with a file or burred, and then sandpapered.

4. If local alteration in shape is required the area should be carefully flamed with a Bunsen burner on both sides till it softens, and then moulded by hand.

5. Cleaning and sterilization.—Cleaning should be done with soap and water (not boiling) or with cetavlon. After this the splints may be polished with any metal polish. Such cleaning agents as ether, benzine, chloroform, and xylol should not be used, as these are solvents.

6. Various methods of heating have been tried, but it has been found that the most satisfactory way is with radiant heat or infra-red ovens. These adequately soften the whole material, without overheating the surface.

Perspex splints are being used for cases of tuberculosis of the spine, osteomyelitis of the sacrum, anterior poliomyelitis, fractured spine, and Still's disease, and have been found most suitable. They are preferred by patients to plaster-of-Paris splints.

Our thanks are due to the Royal National Orthopaedic Hospital for allowing us to carry out this experimental work, and to Mr. J. A. Cholmeley and Mr. E. P. Brockman for their encouragement and help. We are indebted to the Triplex Safety Glass Company for the design and presentation of the moulding apparatus, and particularly to Mr. Anstey and Mr. Chart, for whom no trouble has been too much; to Messrs. British Thomson Houston, Watford, for the presentation of the heating equipment; to Imperial Chemical Industries Ltd., for a research grant and material; and to Mr. Desoutter, of Desoutter Bros., for technical help and advice.

USE OF THE CAUTERY IN PLASTIC OPERATIONS ON THE EYELIDS

BY

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The following technique used by me in some plastic operations on the eyelids may be of interest. The results are obtained with the electric cautery alone or in combination with the scalpel, but the major part of the work is done with the cautery. So far as I know the method is not commonly practised, and the subject appears to receive less attention than it deserves from the majority of ophthalmologists. This short paper does not deal with the causes of the conditions found, but only with their repair.

Conditions Dealt With

The main types dealt with are: ectropion, entropion, symblepharon, distichiasis, and ptosis. The aim is to produce just enough contracture, by scarring in the underlying tissue, to cause the lids to assume a normal position. I use the ordinary Weiss cautery, and the size of point used will vary with the condition—from 5 mm. to 1 cm. long and 2 mm. to 1/2 mm. wide at the base. It is astonishing how little scarring the skin and conjunctiva suffer, even after very vigorous treatment.

Perhaps the commonest condition met with is *entropion* of the lower lid. An injection of 2% novutox along the whole length of lid secures analgesia; a point 1 cm. long and 2 mm. broad at the base is selected, and sufficient current to make it red-hot along its whole length is applied. The point is pushed through the skin down to the base of the tarsal plate, 4 mm. below the lid margin. This is done five or six times along the whole length of the lid. The point is held in each puncture about three seconds. No dressing is necessary and the puncture wound heals in about five days. The patient is given boric lotion and cotton-wool to wipe away secretion, but I doubt if even this is necessary.

In mild *ectropion of the lower lid* the same technique holds, except that one applies the point inside the lid and directs it below the tarsal plate down into the connective tissue. The lid can easily be maintained with ordinary forceps. If the condition has been present for a long time and is fairly prominent, it is necessary to excise a longitudinal strip of conjunctiva, usually about one-third the width of the exposed membrane, taking the middle third. The amount taken, however, is largely to be determined by the condition present, and it may be necessary to go higher or lower. The red-hot point is then plunged deeply into the exposed tissue, going below and beyond the tarsal plate, in more places than would be used for entropion, and it is necessary to go beyond the limit of the ectropion. One is not likely to cause the contrary condition, and so it is advisable to be thorough. A drop of argyrol 5% and sterile liquid paraffin is then instilled and the eye kept bandaged for 3 days. The drops are repeated each day, of course. The two edges of the conjunctiva rapidly come together, and there is seldom any break in the continuity after 10 days.

Ectropion of the upper lid is usually more severe and requires to be done thoroughly. The middle third of the conjunctiva is resected along the whole length of lid and the red-hot point is plunged deeply into the connective tissue, to and beyond the tarsal plate, at a sufficient number of places. There is usually quite a lot of haemorrhage after the conjunctiva has been resected, but if the lid is controlled with forceps an assistant with swabs can keep the field fairly clear. The application of the cautery soon stops all bleeding. Argyrol 5% and liquid paraffin are then dropped in, and it is advisable to pass a stitch from upper lid to cheek. This stitch may remain for three days. Thereafter argyrol for a few days more will usually suffice.

Symblepharon is a difficult condition to treat by the usual methods and often recurs. I have only attempted to disengage adhesions, not to cure the condition, when the cornea is invaded. In addition to drops, some cocaine is injected subconjunctivally. The cautery is then applied to divide the adhesions at the most suitable spot, the point being carried down to the sclerotic. Each adhesion is thus treated and the usual argyrol and liquid paraffin instilled. It is seldom that the adhesions reunite.

The treatment of *distichiasis* and *trichiasis* by electrolysis is a long, laborious, and not very successful business. I have been able, with the cautery, to do both lids of an eye at one sitting of about 10 minutes, and the result proved satisfactory. The lids are anaesthetized with novutox and a drop of cocaine placed in the eye. Then a point 5 mm. long and as narrow as possible is used. I always employ the loupe to get a good view of where the point is going. This is used red-hot and pushed down each hair follicle in turn. It must be pushed down its full length and retained for two seconds. The lashes do not grow again and no damage is done to the lid margins.

I have treated a few cases of *congenital ptosis* in children, and if the results have not been brilliant they have at least been satisfactory in leaving the pupil exposed. The principle is to cause the levator to form fresh adhesions to the tarsal plate. The child will require a general anaesthetic, as it will not submit otherwise. A row of six punctures is made just above the tarsal plate, then going into each puncture again, passing the point upwards this time, and in the subcutaneous tissues as far as it will go. The point should be 1½ cm. long. No dressing is necessary, and in fact is inadvisable. I have also dealt with a variety of other conditions, of little consequence, such as warts, which are simply and permanently removed with the cautery.

I hope I do not give the impression of brandishing my cautery at every patient I see. I merely describe it as a very useful procedure in many conditions; it is not generally realized how simple and useful it can be. In my own practice the results are in almost every case superior to those of the scalpel and stitch. I have been practising it now for a number of years.

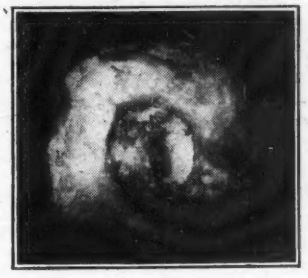
S. Zelman (*Amer. J. med. Sci.*, 1944, **207**, 461) determined blood diastase values in a series of 89 cases of mumps, on admission to hospital and on discharge, with the following results: 73% were above normal on admission and 9% on discharge; 3% were subnormal on admission and 20% on discharge; 15% of this series showed evidence of pancreatitis some time during the course of their illness.

Medical Memoranda

Large Fibroma arising from the Pulmonary Pleura of the Right Lower Lobe

The following case appears to be worthy of publication owing to its rarity and difficulty of diagnosis.

On Aug. 17, 1944, the patient, a man aged 48, consulted his practitioner for pain in the lower part of the right side of his chest on breathing. Examination revealed a dull area at the base of the right lung with weak breath sounds in the area. His temperature was 99.8° F.; he had no cough or sputum. A diagnosis of fluid was made. The basal sedimentation rate was found to be 32 mm. in one hour. His area of dullness increased rapidly, and three days after he was first seen he was screened and a large shadow was observed to move on respiration. It lay in the posterior part of the chest, above the diaphragm. Fluid was also present, and 20 c.cm. was aspirated and sent for pathological examination. It showed



numerous endothelial cells, many of which were undergoing mitosis, and the pathologist suggested that these might be malignant in origin because of this. A tentative diagnosis was made that the tumour might be an endothelioma. Removal of another large collection of fluid caused a great deal of pain, presumably because the tumour was now rubbing against the thoracic wall. It soon ceased as the fluid reaccumulated. This rather tended to support the diagnosis of a malignant tumour.

The man was admitted to the Royal Infirmary, Sheffield, on Sept. 8 and was referred to me for further investigation. A thoracotomy was performed, and on opening the chest a large tumour was found occupying the lower part of the right pleural cavity. It was very nearly spherical, and was lightly attached to the parietal pleura on the one hand by a few adhesions, but arose from the visceral pleura, from which it received its blood supply. Only slight effort served to separate the tumour from the parietal pleura, and it at once fell back into the thoracic cavity. Owing to its size (12 cm. in diameter) it was difficult to manipulate, and it was necessary to resect a portion of a rib in addition to dividing another. On pressing the tumour into the wound from the thorax it shot through the opening in the chest wall and tore itself free from the lung. There was a little bleeding from the area of attachment, which was circular and measured 5 cm. in diameter. The lung was sutured and no further bleeding occurred. The man made an uninterrupted recovery and was able to go home a fortnight later.

The figure is from a photograph of the specimen after removal. The pathological report is that it is a simple fibroma undergoing hyaline degeneration.

I am indebted to Dr. George Herbert of Worksop, who sent the case to me and who also primarily investigated it; and to Dr. L. C. D. Hermitte, of the pathological department, Royal Infirmary, Sheffield, for the pathological notes and photograph.

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An Unusual Case of Ruptured Aortic Aneurysm

Syphilitic aortitis with rupture of a large saccular aneurysm of the abdominal aorta into the stomach is so rarely seen that it was considered justifiable to add the following to the large number of cases of ruptured aortic aneurysm described in the literature.

CLINICAL HISTORY

A civil servant aged 60 was admitted to the Essex County Hospital, Wanstead, on Feb. 16, 1943, complaining of pains in his shoulders, back, and legs; he also had difficulty in swallowing and had lost weight. The pain in his back was of a continuous drawing nature, but he had shooting pains down both legs, accompanied by occasional swelling of his knee- and ankle-joints. He had also noticed some weakness and unsteadiness of his legs. For the past two months he had complained of difficulty in swallowing solids, vomiting almost at once, but he was able to manage fluids and soft foods such as porridge. He lost 2 st. in weight in three months.

On examination he was found to be a very thin, wasted man. His tongue was clean and moist, his throat was normal, and there was no enlargement of his lymphatic glands. No oedema was seen. His pulse was regular, slow, and slightly collapsing. His apex beat was in the midclavicular line and no thrill was palpable in the

mitral or aortic areas. Loud blowing systolic and diastolic murmurs were heard over the praecordium, loudest in the aortic area. Tracheal tugging was absent. His blood pressure was 115/70. Nothing abnormal was found in the lungs and the abdomen. A careful examination of his central nervous system did not give any abnormal physical findings. A skiagram of his chest revealed a large bulge on the right side of the heart shadow which suggested an aneurysm of the aortic arch. Cardioscopy showed a pulsatile aortic aneurysm affecting the aortic arch and thoracic aorta and displacing the oesophagus to the left. It thus caused narrowing and obstruction of the oesophagus, which could be well seen when the patient was given some barium. His left ventricle was much enlarged. The Wassermann reaction was strongly positive.

On Feb. 27 the patient developed diarrhoea, and blood was seen in the motions. On March 4 he suddenly collapsed, complaining of pain across the front of his chest. He was pale and shocked, and his pulse was imperceptible. He died shortly afterwards.

Necropsy.—Acute adhesive pericarditis was present, obliterating the pericardial sac and giving rise to the typical "bread-and-butter" appearance. No pericardial fluid was found. The left ventricle was hypertrophied but not dilated. The mitral, tricuspid, pulmonary, and aortic valves were normal and the openings of the coronary vessels were patent. Half an inch above the aortic valves the beginning of syphilitic aortitis with aneurysm formation was seen. The aneurysmal dilatation extended along the whole course of the aortic arch and descending thoracic aorta down to the first two inches of the abdominal aorta. It was mainly tubular, but one large saccule full of laminated clot extended into the right lung from the aortic arch. In front of the first two inches of the abdominal aorta a saccular aneurysm, the size of a large orange and full of laminated clot, was seen. This aneurysm was pressing anteriorly against the posterior aspect of the left lobe of the liver, indenting it and forming part of the stomach bed. The oesophagus was markedly deviated to the left and compressed in its lower third by the aneurysmal dilatation of the thoracic aorta. On opening the stomach it was found to be full of blood clot. An area the size of a sixpence on the posterior wall of the fundus of the stomach was adherent to the large saccular aneurysm of the abdominal aorta, which had perforated into the stomach in this area. The intestines were normal. There was fluid in both pleural cavities. Many pleural adhesions which could be broken down only with difficulty were seen. The pleurae were thickened over the lower lobes. Both lungs were congested, but no evidence of pneumonic consolidation was found. The spleen was slightly enlarged and was soft. The kidneys and suprarenal glands were normal. The liver showed signs of venous congestion and fatty degeneration.

Dr. Gilmour reports: "Portion of aorta showing syphilitic aortitis. Portion of clot from aneurysm of abdominal aorta adherent to stomach wall containing many streptococci in one place. Portion of stomach with cardiac orifice showing acute and subacute pyogenic inflammation, intense on the outer surface of the stomach and oesophagus and in a small portion of the diaphragm attached. Nothing was seen to suggest a syphilitic inflammatory process." The perigastric inflammation must have preceded the final perforation of the thin stomach wall overlying and adherent to the saccular aneurysm.

D. H. IRWIN, M.B., Ch.B.
Essex County Hospital, Wanstead. E. FRANKEL, M.D., M.R.C.P.

Small-bowel Obstruction due to Dried Fruit

The following case of small-bowel obstruction may be found of interest.

The patient, a woman aged 60, was admitted on May 14, 1945, with the history of a sudden onset of abdominal pain and vomiting the previous day. The pain was colicky in nature and vomiting had persisted up to the time of admission. The bowel action had been quite regular until the previous evening. There was a history of acute appendicitis many years before, and following appendicectomy five abscesses in the scar had occurred.

On examination her temperature was 99.8°, pulse 120, and respirations 28. She was well nourished and not particularly dehydrated. The cardiovascular system was normal, but there was evidence of well-marked bronchitis. The tongue was coated. The abdomen was somewhat distended and showed an old adherent appendix scar. There was marked tenderness in both hypochondria and over a point at the left of the umbilicus, with guarding and audible peristalsis. Rectal examination revealed nothing abnormal. A diagnosis of small-bowel obstruction was made, thought possibly due to bands in the region of the old scar.

Laparotomy was performed through a right paramedian incision. On opening the peritoneum the omentum was found to be adherent to the old scar, but the small bowel, which was distended, was not involved. The distended small intestine was traced down to within two feet of the ileo-caecal valve, where a fusiform mass about 3 in. long filled the lumen. The gut below this was collapsed. The bowel was opened and the mass removed, the incision repaired, and the abdomen closed. She was discharged after an uneventful convalescence on June 5, 1945.

Examination of the object revealed it to be half a dried apricot, which was folded over on itself. Later questioning of the patient disclosed that eight days before admission she had been bottling some apricots and "may have eaten one or two." She wears artificial dentures.

Victoria Hospital, Worksop. T. F. J. RYAN, M.B., M.Ch.
J. NAGLE, M.B., B.Ch.

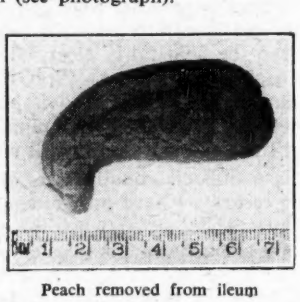
Acute Intestinal Obstruction due to Dried Fruit

This form of intestinal obstruction seems to be a post-war risk, judging by the cases recently recorded. In this case the obstruction was caused by a dried peach.

CASE REPORT

An edentulous old lady aged 64 was admitted to Hammersmith Hospital on May 18, 1945. Six days previously she had eaten dried peaches. As she had no teeth she had sucked the peaches before swallowing. She denied having gulped down any large piece. Four days later she was seized with colicky umbilical pain and began to vomit. This continued until her admission after a further two days. She then presented a picture of acute low small-intestine obstruction. Visible and palpable peristalsis was present in the centre of the abdomen. After a pint of intravenous saline and gastric aspiration by Ryle's tube, the abdomen was opened under regional block analgesia supplemented by nitrous oxide and oxygen. The small intestine was grossly distended. In the lower ileum about 18 in. from the ileo-caecal valve a firm object the size of a peach was felt. It was at the usual site of a gall-stone obstruction, but was not hard enough for a calculus. I could not push it on into the caecum through the contracted ileum below, but it was easily pushed back into the distended coils above. When it had reached a healthier portion of the ileum this was shut off with light intestinal clamps and incised vertically over the object, which was removed and the bowel sewn up transversely in two layers. The abdomen was closed in the usual way. The patient has made an uninterrupted recovery.

The object was yellow and of the characteristic size and shape of a dried half-peach (see photograph).



Peach removed from ileum

COMMENTARY

Elliot (1932) reviewed the cases reported during the previous 22 years and gave the following table:

Obstructing Material	Cases	Obstructing Material	Cases
Mushrooms	5	Poppy seeds	2
Cherry stones	4	"Ammunition bread"	1
Beans	4	Sauerkraut	1
Figs	3	Gooseberries	1
Oats	3	Raisins	1
Potatoes	2	Half an orange	1
Apples, pears, peas	2	Popcorn	1
Corn	2	Bran	1
Grapes	2		

Latchmore (1940) in an article on the cause of "ordinary stomach-ache," which he considers is usually due to bolus colic of the small intestine, reported four cases which required emergency operations for the removal of monkey-nuts, almonds, portions of coconut, and three segments of an orange. No fewer than five cases were recently reported in three papers in the *British Medical Journal* (Jones and Davies, 1945; Lyall, 1945; Radclyffe, 1945)—three due to oranges, one to dried apples, and one to unspecified dried fruit.

It seems that with the release of a considerable amount of dried fruit we should temper our delight with mastication, for the power of dried fruit to swell by the absorption of water is considerable. The risk would appear to be greatest when a portion of unprepared dried fruit is swallowed whole. But there is another risk in the case of edentulous people, who, unable to bite, chew and suck the fruit dry before swallowing. In either case it absorbs fluid in the alimentary canal. It usually has no difficulty in passing through the pylorus and jejunum, but gets held up in the ileum at its narrowest part at the junction of the mid- and hind-gut, one or two feet above the ileo-caecal valve. Often peristalsis is sufficient to pass the bolus on with no more symptoms than stomach-ache (bolus colic of Latchmore). Sometimes at operation it is possible to push the mass on into the caecum. Rarely, as in the case here reported, it has to be removed by enterotomy.

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REFERENCES

Elliot, A. H. (1932). *Amer. J. med. Sci.*, **184**, 85.
Jones, A. S., and Davies, S. W. V. (1945). *British Medical Journal*, **1**, 734.
Latchmore, A. J. C. (1940). *Lancet*, **1**, 1153.
Lyall, A. (1945). *British Medical Journal*, **1**, 734.
Radclyffe, L. (1945). Ibid., **1**, 735.

Reviews

CLINICAL ELECTROCARDIOGRAPHY

Clinical Electrocardiography. By David Scherf, M.D., and L. J. Boyd, M.D., F.A.C.P. Second edition, revised. (Pp. 403; illustrated. 25s.) London: William Heinemann. 1945.

This small book, now in a second revised edition, contains a good deal of valuable information. The general arrangement is on the usual lines. It will be noted that the point of view tends to reflect the approach and experience of the Viennese and French schools, particularly the former, and the result is that a good many opinions held in this country and in the United States do not find expression.

The authors do not accept the theory of circus movement as an explanation of auricular fibrillation and flutter, but regard it as not yet established. They are inclined to hold reserved opinions on the interpretation of the curves of bundle-branch block. They prefer to speak of a common or a rare type, and not to accept the new terminology which locates the more common lesion on the left side of the septum. They doubt whether reduplication of the first sound is ever caused by asynchronous contraction of the ventricles. They hold that the curves showing wide, notched mitral deflections in the ventricular complex are due to arborization block; these are thought to indicate widespread severe lesions in the ventricles, and they believe that the differentiation from the local lesion of bundle-branch block is important. There is a full discussion of chest leads, and a clear account of the various technical difficulties and discrepancies which cause confusion at the moment. Scherf and Boyd prefer to use C R_2 and C R_4, but are cautious, for they regard the value of chest leads as exaggerated.

This book is well worth study, and even if the conclusions are not acceptable the discussion is full, fair, and stimulating. The illustrations for the most part are clear, though some are faint and indistinct, with an obsolete method of time-marking.

INTRAVENOUS THERAPY

Intravenous Therapy. By K. V. Thakkar, L.M.&S. Second edition; revised and enlarged. (Pp. 349; illustrated. Rs. 8/8.) To be obtained from the Kothari Book Depot, Parel, Bombay, 12.

This book begins with a description of apparatus, methods, and dangers of intravenous injection, and then follow chapters on arsenical therapy, blood transfusions, intravenous drip, intravenous anaesthesia, and intravenous injection of drugs. The book serves a useful purpose by gathering together a good deal of scattered information, but it is not up to the standard of English and American textbooks. The typography is clear but there are many misprints. The laudatory forewords to the book and the inclusion of advertisements of proprietary remedies are out of keeping with a scientific monograph. Many of the details about sterilization of syringes and transfusion of blood are not up to date. Apparatus is figured which went out of use in this country ten years ago, and homologous serum jaundice is not mentioned.

The second half of the book is essentially a compendium of details of most of the drugs which have ever been given intravenously. Some of this information is of purely historical interest, and much of it is presented uncritically. There can be little excuse to-day for treating Graves's disease by the intravenous injection of 5 c.cm. of 2% solution of sodium fluoride on alternate days. It is true that the *Extra Pharmacopoeia* mentions the treatment of paralytic ileus by the intravenous injection of 10 grammes of choline chloride in 180 c.cm. of normal saline, very slowly, but we would like to know how slowly; certainly it should not be more than 1 c.cm. a minute. It is not true that iron does not produce toxic effects when given intramuscularly. These, however, are minor blemishes. A more serious fault is the lack of any general consideration of the pharmacological principles of intravenous therapy and the effects on concentration and rate of excretion when drugs are given in this way. In many Eastern countries it is customary for an inclusive fee to be paid for a consultation and an injection, but custom can hardly be the basis for a scientific monograph.

SURGERY OF THE CHEST

Surgical Disorders of the Chest. Diagnosis and Treatment. By J. K. Donaldson, M.D., B.S., F.A.C.S. (Pp. 364; illustrated. 33s.) London: Henry Kimpton.

There is still need for a good and informative book on the surgery of the chest, and many readers eagerly look for one that will fulfil this need. It cannot be said, however, that Dr. J. K. Donaldson's work supplies the want. One striking deficiency is in the quality of the illustrations; the radiographs are particularly disappointing. Good radiographs are essential for the proper presentation of chest diseases.

The book is ill balanced in the amount of space devoted to rare or unimportant conditions; in contrast, the whole field of the surgery of pulmonary tuberculosis is dealt with in less than 70 pages out of 355. Many of the author's statements and conclusions are based on appraisal of the recommendations of others rather than on the authority of his own experience. Some recommendations are startling, such as the dictum that a haemothorax should be aspirated if the chest is still half full of blood after six weeks. Again, the recommendation that simple tuberculous empyema should be treated by needle-aspiration at the lowest level is one that will only tend to repeat the many crops of disasters that have followed this procedure in the past. No other tuberculous abscess in the body is aspirated in the most dependent area. Graham's cautery pneumonectomy is also discussed and advised, whereas to-day it is obsolete and of only historical interest. We agree heartily, however, with the author's statement that although the treatment of tuberculosis has not yet reached perfection the greatest need at the moment is not for improved methods but for a proper and full use of the methods already available.

HEAD INJURIES

Acute Injuries of the Head. Their Diagnosis, Treatment, Complications and Sequels. By C. F. Rowbotham, B.Sc., F.R.C.S. With foreword by Norman M. Dott, F.R.C.S.Ed. Second edition. (Pp. 424; illustrated. 30s. plus 9d. postage.) Edinburgh: E. and S. Livingstone. 1945.

A second edition of this monograph coming two years after the first is a testimony to its popularity. Notable advances have been made in the treatment of head injuries during the war, and although Mr. Rowbotham's book is an expression of the author's own practice and experience he has kept in close touch with new developments, and no important omissions can be found in the many references to recent literature. Several valuable additions have been made, notably in the account of rehabilitation methods, and this should be of as much interest to the general practitioner dealing with a few patients as to authorities responsible for rehabilitation schemes. The author writes in a homely style which is easy to read, but some of the clinical descriptions would be more valuable given in general terms than in single case reports, although the latter may be more interesting. The chapters on technique are clear and well illustrated, so that the general surgeon who is called upon to deal with an emergency should find the answer to most of his problems. For the specialist the book is a useful record of present-day thought and practice and a handy guide to the literature. It is likely to remain the standard British monograph on the subject of head injuries for many years to come.

Notes on Books

For the eighth edition of their popular *Modern Methods of Feeding in Infancy and Childhood* (Constable and Co.; 8s. 6d.) Drs. DONALD PATERSON and J. FOREST SMITH have chosen a new format, and the result is a more compact volume, easy to handle as it is to read. Great revision is obvious, with good use of all that has been learnt of nutrition in recent years. As it approaches its twentieth birthday this book improves upon what always was a sound exposition of an important subject.

Dr. ARTHUR C. GEE in *So You Have a Toddler* (John Wright and Sons, Bristol; 1s., or 10s. 6d. a dozen) follows his success with the ante-natal period and the care of the baby in two previous booklets. More might be said of milk in the diet (and safe milk at that), and it is unfortunate that the chapter on minor ailments starts off with measles and the other infectious fevers. But the approach is sound and helpful, and the stress is rightly on child management and character training. It is a safe book to put in the hands of mothers, and singularly free from fads.

A book on *Semi-Micro Quantitative Organic Analysis*, by R. BELCHER and A. L. GODBERT (Longmans, Green and Co.; 10s. 6d.), describes the apparatus and methods used and approved after selection by the authors from among the various plans of procedure which have been published. As these authors have an unusually large experience in this field, and as they have practised the methods extensively, this book has a special value. The use of semi-micro methods promises to fulfil the needs of an increasing demand, and in addition to the mastery of its accomplishment for its own purposes it provides an easier approach to the use of micro methods proper. The descriptions are lucid and precise and the illustrations are satisfying. It will be found a useful book of reference as well as a sound basis for a course of study.

There is nothing in English literature which takes the place of the German *Zentralblatt für Ophthalmologie*. The lack of these sources during the war years has been a real want, all the more exaggerated by the sudden emergence of problems relating to black-out, offensive air activity, and a whole series of visual difficulties that assumed new and forbidding aspects. The problem was sufficiently acute for the British Air Ministry to ask for the help of the United States Office of Scientific Research and Development in Washington, and of Yale University, in the compilation of a classified bibliography of the literature on the subject. Though belated as a public contribution to the war effort, *A Bibliography of Visual Literature, 1939–44*, compiled by J. F. FULTON, P. M. HOFF, and H. T. PERKINS, is a welcome addition to the bibliographical lists in ophthalmology. It is in no sense an index to the ophthalmic literature during the war years, but in the special field it is invaluable to the research worker. It is issued at $3.00 as Publication No. 11 of the Historical Library, Yale Medical Library.

Letters to a Nurse, by A Midland Doctor (London: Staples Press Ltd.; 3s.), is a fine little book. It would be well if these letters from a doctor uncle to his niece beginning her training in hospital were published by the thousand and supplied to every girl going in for nursing as a career. Every word he writes is true and sound, kindly and understanding, and would be of great help to the somewhat bewildered probationer. He stresses the three essentials to the making of a good nurse. First, it should be her vocation—not just a mode of making a living. Second, good health: a physically and mentally unhealthy nurse cannot bring comfort and health to her patients. Third, unselfishness, sympathy with, and an appreciation of, her patient's condition. He also insists that a nurse should be very kind, courageous, and cheerful. He thinks that the system of most British hospitals is wrong, in that they are understaffed and the nurses overworked, and this of course prejudices the patients' chances of recovery.

The National Baby Welfare Council has published a four-page leaflet dealing with menstruation which has been drawn up by medical experts on the Council's executive committee. The information and advice are given in simple, straightforward language. Copies of this pamphlet (2d. each or 1s. 9d. a dozen) can be obtained from the National Baby Welfare Council, 29, Gordon Square, London, W.C.1.

Preparations and Appliances

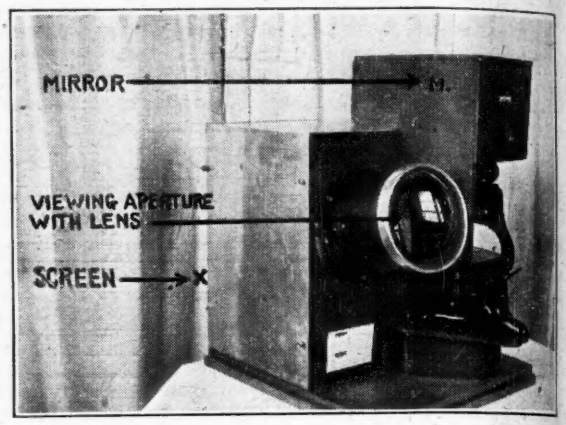
PROJECTION MICROSCOPE FOR USE IN DAYLIGHT

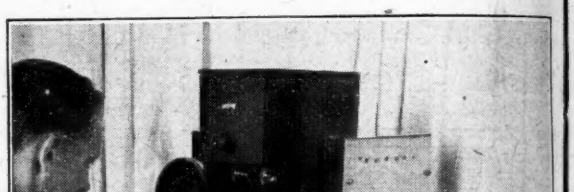
Dr. T. S. DAVIES, Hensol Castle, Pontyclun, Glam., writes:

After visiting a large London hospital recently, and being struck by the great inconvenience caused to the laboratory when it has to be blacked out to do any sort of projection microscopy, I thought that the projection microscope which was constructed locally and at no great cost might be of interest in that it operates in daylight and obviates the necessity for any sort of a dark-room.

The apparatus consists of a box measuring 15 × 14 × 11 in., which is divided into halves by a partition. In the right half is installed a projection lamp, which must be of great intensity and have a small light source. A hole is cut in the box in front of the lamp, and the microscope mirror is placed in front of the hole so that the rays of light are directed upwards through the microscope. On emerging from the eye-piece the light rays strike a mirror (M), which is placed above the eye-piece, and is inclined downwards and to the left, so that an image is thrown on to a screen which is situated at the back of the left-hand compartment of the box. This screen is viewed through a fairly large circular opening, into which is fitted a circular tube, and (to facilitate examination of the screen) a fairly large lens with a long focal length is placed at the examiner's side of the tube. The mirror above the eye-piece is housed in a box-shaped cowling to prevent extraneous light gaining entrance to the screen.

The microscope is not in any way attached to the box and can be moved therefrom immediately and used in the normal manner. The operator sits in front of the apparatus as shown, and there is much less fatigue in the use of the microscope thus than when used in the orthodox manner. The most crucial item in the whole apparatus is the projection lamp. After trying many lamps, by far the best has been found to be the new box-type mercury-vapour lamp which combines





a small source with one of great intensity and can be run off the mains through a choke supplied with the lamp by the makers (B.T.H. Co., Ltd.).

In the matter of a screen, any simple white flat material—a piece of white paper—is satisfactory. Good resolution is obtained with the 2/3 and 1/6 in. objectives, but not with an oil-immersion 1/12 in. The apparatus has been found very useful for such work as the examination of urinary deposits, blood counts, etc., and greatly lessens the fatigue associated with long periods of microscopical work.

I wish to acknowledge the encouragement given by the medical superintendent, Dr. E. Lewis, with whose permission this article is forwarded.

FLAVAZOLE

"Flavazole" is an equimolecular chemical combination of 2:8-diaminoacridine (proflavine) and sulphathiazole. It has recently been reported (*Lancet*, July 28, 1945, p. 97) to have valuable properties as a wound antiseptic. It is less irritant than proflavine, neutral in reaction in solution, and combines the bacteriostatic powers of its two components; indeed, the action on Gram-negative bacilli, notably *Proteus* and *Ps. pyocyanea*, is apparently enhanced by the combination. It has been used chiefly in powder form, 2 parts being diluted with 98 parts of sulphathiazole. Insufflation of this powder eliminated the infection in a large proportion of wounds awaiting plastic repair and even in pressure sores. Flavazole may be used in the form of saturated solution in any infected cavity and even in the conjunctiva (solubility in water 1 in 2,500). It is compatible with penicillin, which can therefore be added to flavazole–sulphathiazole powder if necessary.

Flavazole is prepared at Nottingham by Boots Pure Drug Co. Ltd., and is available in bottles of 25 or 100 g.; sterile compound flavazole powder (flavazole 2%, sulphathiazole 98%) can also be obtained in cartons of sifter packets each containing 5 g.

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MEDICINE'S DEBT TO PASTEUR

Fifty years ago, on Sept. 28, 1895, Louis Pasteur died in his 73rd year. Though not a medical man he contributed more, both directly and indirectly, to the advance of medical science in the second half of the 19th century than perhaps any other man. The first half had seen the building up of solid knowledge of the correlation between physical signs and morbid anatomy, but of the causes of disease there was, as Osler said, "Before Pasteur, Egyptian darkness." In the retrospect one is struck with the beautifully logical development of his ideas, which grew from a minor point to wider problems. He was impressed by Laplace's vision of "a Galileo or a Newton arising through a series of inductions from particular phenomena to others more far-reaching," and this characterized all his work. Thus, trained as a chemist he turned to crystallography, and (incidentally creating stereo-chemistry) by his studies of dextrorotatory and laevorotatory tartaric acids, showed that only the former underwent fermentation, and that by means of living organisms—a thesis persistently denied by Liebig. When asked what was the use of his more recondite researches, he retorted by repeating Benjamin Franklin's question, "What is the use of a newborn child?"—a hint which might be taken by those present-day scientists who would restrict scientific research to subjects of "social value."

Pasteur quickly showed the social value of his researches in crystallography by curing the diseases of beet sugar, wines, and beer; but what authority could have anticipated this? Moreover he said, "What would be most desirable would be to push these studies far enough to prepare the road for a serious research into the origin of various diseases [such as] putrid and contagious ones," believing, as the far-sighted Robert Boyle had expressed it in the 17th century, that "he who could discover the nature of ferments and fermentation would be more capable than anyone else of explaining the nature of certain diseases." Accordingly Pasteur started the study of silkworm disease, which was devastating the industry in these worms in France, and restored it to prosperity by discovery of the parasite responsible. He was bitterly opposed by the believers in spontaneous generation—a theory which it might have been supposed had been killed by Redi in the 17th century; but far from it, for this was the root of the opposition to the germ theory of disease. To do his opponents justice, they felt, as Piorry put it, "it is not the disease, an abstract thing, which we have to treat but the patient whom we must study with the utmost care." Their mistake was to deny the germ theory entirely; if they had not done so they might have realized that Pasteur himself had presented them with a proof that the soil mattered as well as the seed when he showed that animals naturally immune to an infection lost that immunity if placed under unfavourable conditions. Undeterred by opposition Pasteur went on to investigate the epidemics of "splenic fever" which were destroying valuable flocks and herds throughout France. He proved that they were due to infection by anthrax and perpetuated through the action of earthworms bringing to the surface the bacilli and spores from the buried bodies of animals that had died from the disease. His studies of chicken cholera led him to the important discovery of methods of attenuation of viruses and thus to the preparation of vaccines. "Is it not permissible," he said, "to believe by analogy that a day will come when easily applied preventive measures will arrest the ravages" of epidemic diseases? A dictum of his that "the best proof that an observer is on the right track lies in the uninterrupted fruitfulness of his work" was now to be strikingly illustrated by the application of his principle of attenuation to the treatment of hydrophobia. Early impressions persist, and one of Pasteur's childish recollections was the terror inspired in the Jura by the inroads of a mad wolf. He therefore attacked the problem with great energy and, as is well known, with great success, to which the foundation of the Pasteur Institute in Paris by public subscription was a striking witness. Here, with the assistance of Roux, Yersin, Chamberland, and Metchnikoff, his beneficent work continued and expanded, giving rise to similar institutes in various parts of the world. But there is no institute for hydrophobia in Great Britain, for the muzzling order stamped out the disease here. Pasteur's last years were rejoiced by the discovery of diphtheria antitoxin by Roux and Yersin at the Institute, and shortly after by Yersin's discovery of the plague bacillus in India. But perhaps his greatest pride in his followers was for Lister, whose earlier adaptation of Pasteurian methods to the control of sepsis after operation is recognized throughout the world as one of the greatest boons to suffering humanity—a striking instance of the fruitfulness of a single idea faithfully pursued.

Pasteur's work, here rapidly sketched, was the measure of the man, patient and indefatigable, remorseless in his criticism of his own findings, single-minded in pursuit of truth, and devoted to the welfare of mankind and therefore a firm believer in the internationalization of science. No man can have met with fiercer or more bitter opposition than this great benefactor. It is to be regretted that he spent so much time confuting adversaries who had only the flimsiest evidence to support them; but for one of his temperament it was impossible to leave the battlefield against ignorance just as it was impossible to deny pity and help to real suffering. A hard hitter in controversy, he had also a gift for loyal and devoted friendship. Perhaps his creed was best expressed in words from his oration at the opening of the Pasteur Institute—words which are even more relevant to-day than when they were spoken: "Two contrary laws seem to be wrestling with each other nowadays: the one of blood and death, ever imagining new means of destruction and forcing nations to be constantly ready for the battlefield; the other a law of peace, work, and health, ever evolving new means of

delivering man from the scourges which beset him. . . . The latter places one human life above any victory, while the former would sacrifice hundreds and thousands of lives to the ambition of one. . . . Which of these two laws will ultimately prevail God alone knows."

FENESTRATION FOR OTOSCLEROSIS

Fenestration as a mode of relieving the deafness of otosclerosis has passed the experimental stage and has come to stay, though so far it has not been much practised in Great Britain; a technique which promises to give 80% of good results deserves close attention. The operation has now passed from the period when it was done in multiple stages, but it is long and tedious; the opening into the labyrinth must be made under magnification, with fine burrs, and it must remain in the hands of a few with special aptitude. The operation does not cure the disease, but it is the only means available, apart from hearing aids, of relieving the deafness. There is some evidence that the decompression may halt the progress of the disease, as it has been noticed that in cases of successful unilateral operation on the worse ear the hearing in the previously better ear has continued to deteriorate. During the past year or so the operation has had a good deal of publicity, and many inquiries about it have been sent to the *Journal*. A full review of the subject would therefore seem to be opportune.

The clinical conception of otosclerosis is not necessarily quite identical with the pathological, as the diagnosis must ordinarily be made from clinical signs and symptoms, which only on rare occasions can be checked by pathological examination, though much histological study has been carried out, notably by Albert Gray[1] and Felix Nager.[2] Clinically the principal symptom is progressive deafness of conduction type, generally with tinnitus, in an adolescent or young adult with normal tympanic membranes and unobstructed Eustachian tubes. This deafness turns occasionally in advanced cases into a total loss of hearing from perception deafness. In about half the cases there is a familial or hereditary history of deafness, which also in about half the cases begins between the ages of 16 and 30. Pregnancy and childbirth are known to aggravate the deafness sometimes, though Nager thinks that the influence of these factors has been overestimated. A symptom of this kind of deafness is the ability to hear better in a noise—the paracusis of Willis—which occurs in about one-fifth of the cases. Gray has explained how this is produced by the superimposition of one series of vibrations upon another of much greater amplitude, the vibrations of smaller amplitude acting when the system is passing through the position of equilibrium for the vibrations of greater amplitude. As this effect can be produced only by a partial fixation of the stapes, the symptom is of bad omen in prognosis. This fixation of the stapes has been found to be the essential physical factor in the deafness, and histological examination has shown that the ankylosis is only a part of a profound change which takes place in the temporal bone. This change begins with a continuous lacunar resorption in the bony capsule of the labyrinth, shown by finger-like processes of bluish tissue (so-called blue mantle) which have each a small blood vessel in the centre. These blue mantles represent the first change—a condition of which the aetiology is unknown. The mantles turn into areas of dark-staining porous bone with large marrow-filled spaces and a good line of demarcation, shown by deep staining with haematoxylin and eosin. These changes often arise in mute regions, but the points of predilection are the angle in the outer wall of bony labyrinth between the cochlea and the vestibule, the round window, and the bone surrounding the internal auditory meatus. The extent of the pathological changes therefore bears no necessary relation to the severity of the deafness, which depends on the effect on the stapedio-vestibular ligament, on the frames of the windows, which may be closed by exostoses, and on the auditory nerves. No evidence of any general metabolic disorder of bone has been found, though Gray noted that many patients, of whom 8 out of 9 are females, are anaemic, and no treatment is known which will arrest, and still less reverse, the pathological changes.

A similar though not identical localized osteodystrophy has been observed in Paget's and in von Recklinghausen's diseases. It will be appreciated, therefore, that the clinical and pathological aspects do not precisely correspond, since the stapes may become fixed in the oval window by some other adhesive process and cause obstructive deafness. Attempts to relieve the deafness and tinnitus by extraction of the stapes have always failed, but it has been known for about thirty years that, if an opening be made into the lateral semicircular canal without damage to the membranous labyrinth, this decompression improves the hearing for about ten days, but it returns to the previous state in six or eight weeks, when the opening has closed. Much time and ingenuity have therefore been expended upon attempts to make an opening which will not close. Holmgren[3] in particular has been a tireless worker in his endeavours to achieve this. Thiersch grafts, fat grafts, mucoperiosteum, gold leaf, laminaria, rubber, platinum wire, have all been tried, as well as electrolysis and irradiation, as means of keeping the fistula patent. This has led eventually to the accepted plan of placing the fistula far forwards—so far forwards that Lempert claims it is actually in the dome of the vestibule—and covering the opening with a flap formed from Shrapnell's membrane and the adjacent skin of the external meatus. Shrapnell's membrane can be displaced for this purpose by removing the incus and excising the head of the malleus. As an example of the results claimed for this kind of technique, by which the so-called fenestra nov-ovalis is covered with a flap, Shambaugh[4] states that 182 out of 201 cases—that is, 90%—have improved hearing for more than one year, and in 33% the gain was more than 30 decibels. The most suitable subjects for fenestration, however, are just those most helped by a hearing aid, and this often amounts to

[1] *Loose Leaf Medicine of the Ear*, 1939, p. 259, T. Nelson and Sons, New York and Edinburgh.
[2] *Diseases of the Ear*, 1910, p. 97, Baillière, Tindall and Cox, London.
[3] *Loose Leaf Surgery of the Ear*, p. 399, T. Nelson and Sons, New York and Edinburgh.
[4] *Arch. Otolaryng.*, Chicago, 1945, **41**, 189.

over 40 decibels, so that a properly fitted hearing aid often gives greater amplification than the corresponding improvement by fenestration. The improvement obtained by fenestration, however, is not subject to the disadvantages of hearing aids, which amplify extraneous disturbing sounds and are a poor substitute for normal hearing. Further, the power of hearing for speech rather than for the sounds produced by a pure audiometer is the crucial test, so that the tests should be made by a speech audiometer rather than recorded in decibels for pure tones. An audiometric improvement of 10 decibels in a very deaf patient is of no value if it does not enable speech to be heard. Taking such points into consideration, Shambaugh claims for fenestration a 90% chance of lasting improvement, and a 70% chance that this improvement will equal or surpass that obtained by a hearing aid.

It may be accepted that rather less than half (probably about one-third) of the patients treated by this technique have gained real benefit. An improvement which is revealed only by a number of decibels on an audiogram does not justify a claim to success, for the improvement must be great enough to bring the hearing within the conversational range. Unless this is achieved the operation is clinically a failure, so that an exact percentage of successful results, where the crucial test is subjective, is not easy to estimate. Lempert,[5] however, observed that, even when the new window was kept open and the fistula test for nystagmus remained positive, success was not assured, and that in a number of cases which appeared to be successful technically the improvement disappeared. A post-operative non-suppurative labyrinthitis was usually regarded as a tiresome complication, but Lempert concluded that on this account, although the hearing at first becomes better, it worsens after two or three days and does not improve again until two or three weeks have passed. There is then a rapid improvement corresponding to that which immediately follows the operation. The drop in hearing is due to a non-suppurative labyrinthitis, and the hearing does not remain better until this post-operative labyrinthitis has subsided; but it may cause permanent changes which would account for the failures in which the hearing does not return to the immediate post-operative level. Lempert found that this post-operative labyrinthitis occurred in nearly every case treated by this technique, and that if uniform results were to be obtained some means of eliminating it would have to be found, as the cases which preserved the improvement, without a drop followed by a secondary improvement, were very few.

The source of this post-operative labyrinthitis is presumably the flap of tympanic membrane and meatal skin which covers the new window and lies in contact with the perilymphatic space, so that an inflammatory extension to the membranous labyrinth could easily take place. Covering the opening with a slice of cartilage lying between the flap and the perilymphatic space was not found to be any protection against labyrinthitis; to obtain this the cartilage has to be shaped into a disk, which fits and closes the opening. As Lempert claims that in this way the improved hearing is retained and the post-operative labyrinthitis is avoided, it appears that it is not necessary to keep the fistula open and covered only with a thin membrane, but that it may be closed with what Lempert describes as a "mobile stopple" of cartilage, which is a substitute for the footplate of the stapes, from which indeed it is separated only by the facial nerve.

It is not possible to follow in detail here the numerous steps which led to the evolution of this new technique, but Lempert[6] now states that out of 10 cases in which the new window was made and filled with a disk of cartilage which on the one hand extends half a millimetre beyond the inner or endosteal surface of the bony rim into the perilymphatic space, and on the other protrudes the same distance outwards beyond the bony rim of the new window into the epitympanum, 8 retained the improvement in hearing without interruption by labyrinthitis. It seemed that in the other 2 the stopple did not retain its mobility, for the hearing returned to the pre-operative level. Since the stopple is squeezed into the opening like a cork it is difficult to understand how it retains the necessary mobility, and this point requires further elucidation, as it is hard to imagine that any structure comparable to the stapedio-vestibular joint with its annular ligament can be organized in this way.

[5] *Arch. Otolaryng.*, Chicago, 1941, **34**, 880.

AN EXPERIMENTAL STUDY OF A MAN AND HIS STOMACH

The second printing of *Human Gastric Function* by Wolf and Wolff[7] will gain a wider audience for a book which has already become a modern classic of medical literature. It is the report of a series of studies on a patient with a large and prolapsed gastrostomy through which the responses of the stomach could be intimately observed. A book of this kind naturally invites comparison with Beaumont's account of Alexis St. Martin, and we are again reminded how inspired and accurate Beaumont's work was. Nevertheless, changes occur in men's outlook. Beaumont was largely concerned with the mechanism of gastric secretion, and Carlson, in a similar case and at a later date, with gastric motility, whereas Wolf and Wolff have been most interested in the effects of emotion on the stomach. The physiological data which they have collected are also of much value. The gastric mucosa varies in colour from a faint yellowish pink to an intense cardinal red, or approximately the whole range of the Tallqvist haemoglobin scale. During the resting stage the stomach is pale and quiet, and acid is secreted in small amount. Colour, rate of secretion, and motor activity generally run parallel, and all increase in preparation for eating at the mention of appetizing food. The layer of mucus on the surface of the stomach is of immense importance in affording protection from the corrosive action of the gastric juice. The normal gastric mucosa does not respond to irritation or stimulation with pain; the only pains which can be induced are the pain of heartburn, which is due to irritation of the lower end of the oesophagus by acid juice or similar stimuli, and the pain of distension or strong contraction of the musculature. When, however, the mucosa is congested and inflamed, intense pain occurs on the application of the usual stimuli, and engorgement also lowers the threshold for muscle pain. The response of the stomach to drugs and other stimuli is much affected by the emotional situation, and the analysis of the effects of emotion forms the main theme of the book.

[6] *Arch. Otolaryng.*, Chicago, 1945, **41**, 17.
[7] *Human Gastric Function*, Oxford University Press (New York), 1943 (second printing 1944). English price, 25s.

It is evident that the psyche of Wolf and Wolff's patient had been affected by his gastrostomy, which had been performed in childhood for a stricture of the oesophagus following a scald. It had given rise to a sense of insecurity and the fear of being humiliated, and had undoubtedly impaired his capacity to show or to respond to affection. He used to chew his food first and then put it into his gastrostomy, a procedure which caused him considerable embarrassment, and his world was divided into those with whom he could eat and those with whom he could not eat. With the former he was frank and intimate, but with the latter often detached and suspicious. His family training and his disability had combined to make him set up ideals which he was not always able to sustain in practice. For all these reasons he often suffered severe and protracted emotional disturbances which made him an ideal subject for the study of the effect of the emotions on the stomach. Sadness, discouragement, and self-reproach were associated with prolonged pallor of the gastric mucosa, hyposecretion, and hypomotility ; anorexia and slight nausea were observed in these circumstances. With resentment and hostility the mucous membrane was turgid, engorged, and redder than usual, the gastric secretion was much increased, and vigorous contraction occurred. Prolonged anxiety and emotional tension were accompanied by sustained hyperfunction of the stomach which persisted during sleep. In these periods of anxiety appetite was often greatly reduced, showing that the physiological state of the stomach does not determine the presence or absence of appetite. The phenomena are comparable with data from patients with peptic ulcer, showing that symptoms are prominent during times of emotional conflict. The appearance of the hyperfunctioning stomach is identical with that of gastritis. The folds are thick, red, and succulent, and the slightest trauma or even vigorous contraction of the stomach results in the appearance of red haemorrhagic spots or erosions. If hypersecretion continues, and the mucous protection of the surface is diminished, erosions may develop into chronic ulcers. An inflamed area is in itself an adequate stimulus for hypersecretion.

The observations of Wolf and Wolff go a long way to show how mental impressions and feelings might lead to hypersecretion and chronic ulceration of the stomach or duodenum, though it must be noted that their patient had no ulceration within the stomach and that an ulcer was produced only in the prolapsed mucosa where the protective coat of mucus was reduced. Their book has wider implications also. Psychosomatic medicine is at present passing through a phase of uncritical enthusiasm, just as analytical psychology did a generation ago. There is the same tendency to unbridled speculation, to the interpretation of natural phenomena *ex hypothesi*, and to a rather primitive and pictorial type of thinking. The history of science records how often men have gone astray because they have not checked their hypotheses by controlled observation and experiment, and Wolf and Wolff's technique should be a pattern for workers in this field.

MODE OF ACTION OF VITAMIN D

Radio-active "tracer" or "tagged" elements have been used to study the metabolism of a number of elements, including iron, calcium, iodine, and phosphorus. The technique consists of making a radio-active isotope of the element by bombarding it with deuterons in a cyclotron and, after ingestion or injection, by following the course of the radio-active or "tagged" element through the body by means of a Geiger-Müller counter. This picks up the radiations emitted by the radio-active isotopes and serves for their detection and estimation. With this technique Cohn and Greenberg[1 2] have studied the mode of action of vitamin D in rickets. It has been widely accepted that vitamin D acts by increasing the absorption of calcium from the gut and the urinary excretion of phosphorus, but that it has no effect on either the faecal excretion or the absorption of phosphorus. Many workers have felt this explanation to be inadequate, and believe that, apart from its action on the absorption and excretion of calcium and phosphorus, vitamin D has a direct influence on the mineralization of bone. Using radio-active phosphorus, Cohn and Greenberg[1] showed some years ago that vitamin D aids the conversion of organic to inorganic phosphorus in bone. Cohn[2] has now investigated the action of vitamin D in rickets by giving rachitic rats irradiated ergosterol and radio-active calcium by intraperitoneal injection or stomach tube. Three days later the animals were killed and the radio-active calcium estimated in the excreta, bones, teeth, and carcass. The excreta and the skeleton were found to contain the bulk of the radio-active calcium, the amount in the soft tissues being comparatively negligible. These observations confirmed the view that vitamin D promotes the absorption of calcium from the digestive tract, and also proved that it exerts a direct effect on the mineralization of bone in rachitic animals.

CANINE HYSTERIA

Canine hysteria—also known to veterinary surgeons as running fits, fright disease, epizootic hysteria, and infectious hysteria—is an ill-defined disease of dogs, the aetiology and treatment of which have long been in dispute. The symptoms associated with it are paroxysmal attacks of hyperexcitability, manifested by running, barking, or howling, defective vision and balance, dementia, and sometimes clonic convulsions, during which a heavy mucous saliva is secreted and the animal frequently urinates and defaecates. The affected dogs appear to be indifferent to pain or to attempts to calm them. It is thought that excitement, physical strain, and sudden stimuli, such as a sudden noise or flash of light, may precipitate attacks. Heredity has also been thought to be a causal factor. Many authorities believe the disease to be related to defective nutrition. Lack of vitamins A and B_1, of magnesium, and of lysine have been suggested as causes, and also a toxic factor or factors in wheat products.

Wagner and Elvehjem[3] have recently brought forward evidence to show that canine hysteria is dietary in origin. The terms "epizootic" and "infectious" to qualify the disease are ill chosen, as there is little evidence that an infectious agent is responsible. Well-fed animals kept alongside affected animals showed no signs of the disease. Wagner and Elvehjem produced the disease in dogs by feeding them on baked dog foods containing wheat gluten flour and on experimental rations containing the same material. Although the proteins in gluten are deficient in lysine, protein and lysine supplements did not prevent the onset of the disease. The fact that hysteria was caused by feeding wheat gluten flour to dogs receiving nutritionally adequate rations suggested there was some toxic factor in the flour, or possibly a deficiency of an essential food factor. It is possible that if the effect of the toxin were not too severe, correction of the deficient food factor might increase the animals' resistance to the supposed toxin. This might explain the curative effects reported in the past of supplements of casein, lysine, vitamin A, and vitamin B_1.

[1] *J. biol. Chem.*, 1939, **130**, 625.
[2] Ibid., 1945, **157**, 99.
[3] *J. Nutrit.*, 1945, **28**, 431.

LONGEVITY AND OLD AGE IN THE PUNJAB

BY

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(ABRIDGED)

To the medical profession hitherto the problem of old age has presented its chief interest in connexion with the methods of prolonging human life, such as Voronoff's technique of grafting slices of simian testes in the testes of man, Steinach's advocacy of vasectomy, and the use of testicular and ovarian extracts. From the eugenic, social, ecological, and other points of view, however, the question of longevity raises some serious and complex problems. For example, after a certain age, when man's productive capacity dwindles, he becomes a dependant and remains so until death. India is already supporting a large number of dependants—invalids, beggars, widows, and others—and might well ask whether an attempt to prolong human life and thus increase the proportion of the aged would not add to the heavy burden of her poor working population. In a leading article in the *British Medical Journal*[1] some interesting comments were made on ageing and the care of the aged, and the White Paper on Social Insurance was quoted to the effect that in Great Britain between 1965 and 1975 there will be an increase of about 800,000 in the pensioner population and a decrease of more than one million in the contributing population, supposing the present decline in the birth and death rates to continue. In India the question of pensioners is not yet important, but that of dependancy is present in many forms.

The Limit of Human Life

The limit given by the Psalmist to human life is often much exceeded both in the East and in the West. In India the Vedas [Brahman sacred writings] enjoined men to live 100 years, and this age is known to have been reached fairly often in the Punjab as well as elsewhere. There has been some speculation in scientific literature about the ideal duration of life. Rolleston[2] quotes Hufeland as laying down the law that animals generally live about eight times as long as they take to reach maturity, and Hufeland's figure of 200 years as the ideal span of life is obtained by regarding 25 as the termination of adolescence. Both figures—8 and 25—appear to be arbitrary. Flourens calculated that, throughout the animal kingdom, life was five times as long as the period taken to complete growth, as marked by the union of the epiphyses of the long bones, and as this union took place at 20 or 21 the the span of human life should be about 100.

It is of interest to recall some extreme claims for longevity, admitting, of course, a considerable lack of accuracy in age records. Rolleston[2] quotes the cases, among others, of Henry Jenkins, who lived from 1501 to 1670; Thomas Parr, who lived from 1483 to 1635; and Katherine, Countess of Desmond, who lived 145 years, though some have said that the ages of two Countesses of Desmond were telescoped into one. The question of the longest life to be reasonably attested is of interest to actuaries, and in an American actuarial publication Dublin and Lotka[3] cite the case of C. J. Drakenberg, a Danish seafarer, who was born in 1626 and died in 1772. It is declared that he was sturdy and robust and temperamentally very impetuous. At the age of 111 he married a 60-year-old widow, who died a few years later, and at the age of 130 he proposed to several women but without success.

In India an interesting case was recorded in the 1931 census report[4] of one Siddi Wastad, the son of a negro father and Arab mother, who lived in Nagpur. At the time of the census he was supposed to have passed his 150th year, but the census superintendent for the Central Provinces stated that, even allowing for much exaggeration, his age would then have been 130 years. We addressed an inquiry to Dr. R. L. Tuli, Director of Public Health, Central Provinces, who has informed us that Siddi Wastad died at the age of 158 years on August 14, 1943. He was a famous wrestler at the court of the Maharajah of Baroda. Until the influenza epidemic of 1918 he remained in perfect health, but he was attacked by that scourge and gradually lost his teeth and his hair turned white. Until then it had not been his habit to lie down or go to bed. A short nap in a chair at night was all that he needed, and he offered his prayers five times a day. His diet up to that time was six pounds of flour for one meal, as well as vegetables, rice, mutton, and four seers[5] of milk each day. When ill he never took drugs, but he prepared his own medicines and medicated oils and treated himself.

Outstanding Age Records in the Punjab

We sent a request to all the district and municipal medical officers of health in the Punjab for recent information concerning long-lived persons in the Province, and some very interesting replies have been received, enabling us to state that this Province has a good number of persons who have passed the century. We further requested the officers to throw light on the state of health enjoyed by persons who had lived to advanced ages. It is not possible to comment in detail on the information supplied; in some cases further inquiry seemed necessary. Only a few salient points may be briefly mentioned.

The maximum age so far reported to us as having been reached in recent times in the Punjab is 138 years. This was the age of a person named Khan Dadan Khan, who died of fever four years ago in the Rawalpindi district, a hilly part of the Province. The death also occurred last year of Khanam Jee, in Rawalpindi city, at the age of 135 years. Two more deaths each at the age of 130 years have been reported from Lahore and Lyallpur districts. An interesting account has been received of one Saleh Mohammed Khokhar, who died recently at the age of 120 years in the Rawalpindi district. The district medical officer of health reports of this man that his grey hair had grown black and that new teeth had appeared. He was accustomed to eat maize, meat, and leafy vegetables, and he never drank tea. Quite a number of other instances have been reported to us of persons who have died recently at the ages of 110 and 130. Generally the cause of death has been stated to be "fever" or "old age," both vague terms. Without further inquiry nothing can be stated as to the precise cause, though we have little reason to doubt that malaria has been an important one.

Among the living in the Punjab a person is reported to have reached 130 years of age in Sialkot, 70 miles from Lahore. His state of health is said to be good. A dhobi [low-caste Hindu] 125 years of age is reported to be living in Amritsar. He attributes his longevity to his habit of taking the gum of the pipal tree [the sacred fig]. Two women of 120 years are reported—one in Ambala, near Simla, in a satisfactory state of health, and the other in a village in the Gujrat district, who is blind, deaf, and bedridden. The number of persons who claim to be over 100 years of age is fairly large. Most of these living persons claim that their longevity is due to the inclusion of ghee [clarified butter], milk, and dairy products in their diet. Some have been taking a few seers of *lassi* daily during both summer and winter. Abstention from tea and tobacco, moderation in sexual life, and plenty of exercise when young are some of the other factors which these persons claim to have contributed to their longevity. Among the diseases from which they suffer in their old age malaria, eye troubles, bronchitis, and pneumonia are mentioned, but these, of course, are just those affections which constitute the recognized general causes of ill-health in the Punjab.

Expectation of Life in the Punjab

[The authors then turn from the discussion of a few cases of exceptional longevity to the length of life of the population of the Province as a whole, and they explain what is meant by the phrase "expectation of life" as used in census returns and by insurance corporations. The estimate is made by actuaries for each age and shows, on the average, the added number of years for which people of that age are likely to survive. They state that there are some

[1] *British Medical Journal*, 1944, **2**, 634.
[2] Rolleston, H., *Medical Aspects of Old Age*, 1932, Macmillan.
[3] Dublin, L. I., and Lotka, A. J., *Length of Life. A Study of the Life Table*, 1936, Ronald Press, New York.
[4] *Census of India*, 1931, **1**, 106.

[5] The Government seer in India is just over 2 lb. avoirdupois.

objections to the use of expectation-of-life figures relating to India for making long-term comparisons, but for the immediate purpose of studying longevity in the Punjab such estimates may be regarded as fairly useful.]

The latest estimates of expectation of life in the Punjab, as in the rest of India, followed the census enumeration of 1931.

EXPECTATION OF LIFE AT BIRTH FOR MALES IN CERTAIN COUNTRIES.

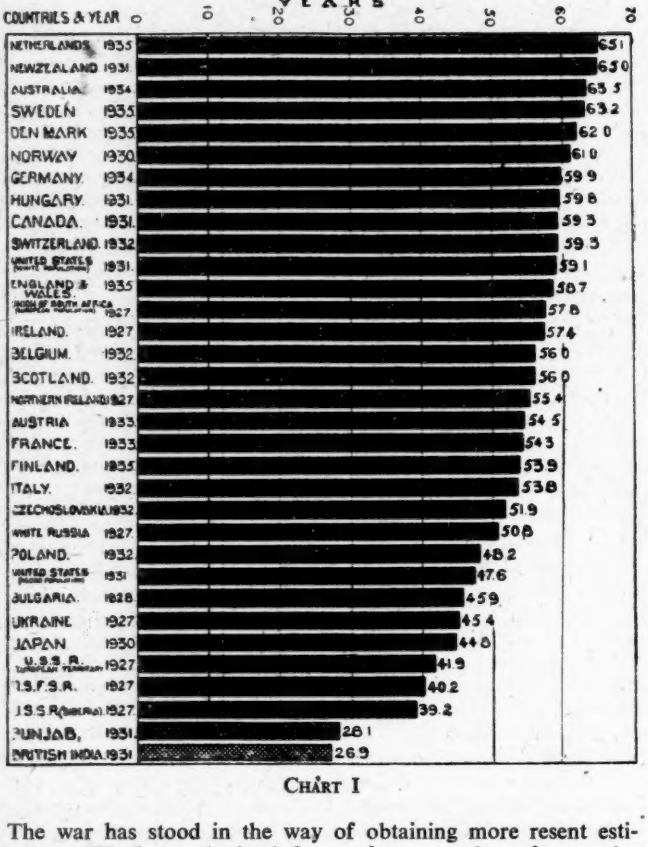

CHART I

The war has stood in the way of obtaining more resent estimates. We have obtained figures for a number of countries corresponding to the 1931 estimates for the Punjab and for British India, and these are presented in Chart I, the countries being arranged in decreasing order of expectation of life at birth for the male inhabitants. The Netherlands are at the head of the list with as high an expectation of life as 65.1 years, and New Zealand and Australia rank next. British India is lowest in the chart, with 26.9 years, and the Punjab is only slightly higher (28.1). Generally speaking, all the advanced countries of the world, especially those in the West, have an expectation of life far in excess of the Punjab and British India. Among Eastern countries, the figure for Japan (44.8) is interesting; it is more than one and a half times the British India figure.

Within India itself the Provinces show variability, though not as large as that seen in the comparison of countries. Chart II gives the figures for the Provinces, and for males and females in each Province. The Provinces are here arranged according to an increasing expectation of life for females. The highest estimates are for Madras, where the females show a figure of 30.04 years (the only instance in which 30 years is reached). The lowest estimates are for the area adjoining Bengal, comprising the North-West Frontier Province, Sind, and Baluchistan. The Punjab figures are exceeded by those of Bihar and Orissa, the Central Provinces, Berar, and Hyderabad, and Madras.

Lower Female Longevity

It is almost a universal experience that females are longer-lived than males, but the Punjab affords a striking exception, as also do the North-West Frontier Province, Sind, and Baluchistan, Bombay Presidency, and Bihar and Orissa. Probably the lack of adequate facilities for maternal relief and care, coupled also perhaps with a rather unfavourable attitude towards the weaker sex in the Punjab, are responsible for keeping female longevity at so low a level. In making the statement about an unfavourable attitude towards females we are supported by the great amount of evidence pointing to the practice of female infanticide in this Province in the past.

The attention of the British Government was directed to this subject immediately after the annexation [1849]. Lord Lawrence, while Commissioner of Trans-Sutlej States, promulgated three commandments, the second of which was, "Thou shalt not kill thy daughter." But writing in 1895 Sir James Douie recorded that "fifty years after Lawrence denounced the murder of female infants we are still discussing the best method of putting down that inhuman practice." Several causes tended gradually to restrict the extent of female infanticide, but while in recent years the killing of female infants may have altogether disappeared, the social customs and mental traits which found expression in such inhuman action may still exist among certain classes, with the result that females generally may lead a more neglected life than males.

A low expectation of life for females, which implies a higher mortality rate among them, affects indirectly the male population, because a large number of women die as the result of pregnancy and childbirth, which involves the potential loss of male as well as female children.

In order to illustrate the point that lack of maternity facilities, together with, perhaps, a general neglect of the female population, has brought about reduced longevity for females in the Punjab as compared with males, we quote the mortality statistics for the sexes at different age periods. The figures set out in Table I are based on the average experience

EXPECTATION OF LIFE AT BIRTH FOR MALES & FEMALES IN 1931 BY PROVINCES.

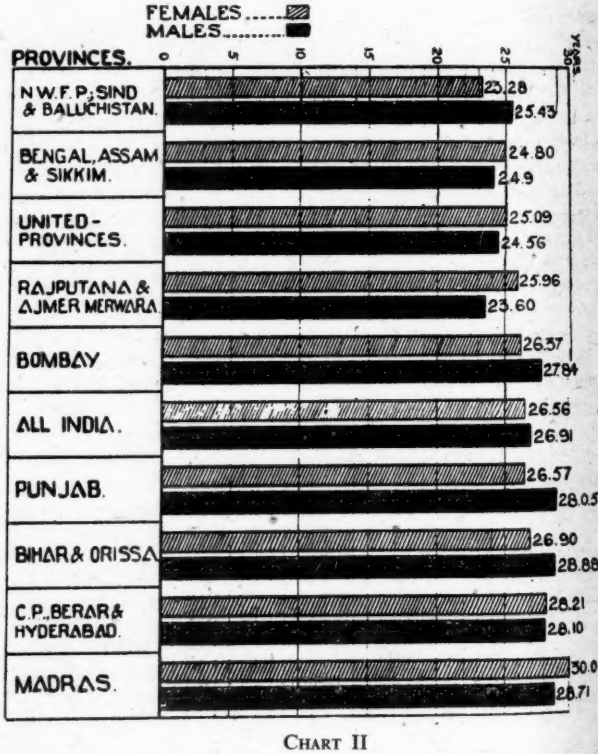

CHART II

of the quinquennium 1935–9, and the death rates are given per 1,000 of the corresponding populations (except that in the first age group the mortality rates have been calculated per 1,000 live births).

Female infants show a lower mortality than male infants; this is also true of the next age group. But from the age group 10–15 years onwards the female population must be considered to have started the reproductive span of life, and

they are found subjected to adverse mortality rates. The difference persists throughout the reproductive period—namely, up to about 40 years. In the ensuing two age groups the difference between male and female mortality rates becomes

TABLE I.—*Death Rates per 1,000*

Age Group	Males	Females
Under 1 year	172	157
1–5 years	37	34
5–10 ,,	9	9
10–15 ,,	7	8
15–20 ,,	8	10
20–30 ,,	7	9
30–40 ,,	9	11
40–50 ,,	14	15
50–60 ,,	24	25
60 and upwards	61	64

less, though the females still have the higher rate, and beyond 60 the difference again increases, to the disadvantage of the female population. On the whole, therefore, this table presents the picture of a female population born stronger than the male, but subjected during the prime of life to adverse circumstances, and continuing to live thereafter the life of a weaker sex, in the real sense of the word.

Further Deductions from Tables of Mortality

Mr. L. S. Vaidyanathan, the actuary appointed by the Government of India at the 1931 census, studied the same point—namely, the comparative mortality figures for each year of age.[6] He did not believe that the recorded births and deaths afforded reliable information concerning mortality conditions in the population, and he proceeded to calculate mortality rates by making use of the indirect evidence available in the 1921 and 1931 census enumerations only. He found that the females started life with a relatively low mortality rate, and maintained this advantage for a few years. Thereafter the female mortality reached a higher level than the male, and this relative disadvantage continued until about the age of 50. After that, according to Mr. Vaidyanathan's calculations, the females scored over the males again and showed low mortality experience almost to the end of life.

Our own deductions from the recorded deaths in the Punjab agree in the main with Mr. Vaidyanathan's differently derived deductions with respect to women in the prime of life. We differ from him concerning the relative position of the male and female at advanced ages. The census enumeration figures of 1921 and 1931, from which he sought to deduce death rates by age and sex, were by no means entirely reliable. We are therefore unable to decide which estimate is subject to the greater error and which must accordingly be preferred.

Mr. Vaidyanathan is an eminent Indian actuary, and in this discussion of longevity and old age we would quote further from his figures. In Table II are set out the figures for the expectation of life for each decennium from 50 to 90 years. They are shown separately for males and females for the Punjab, for the whole of India, and for England and Wales, and they relate to the year 1931.

TABLE II.—*Comparative Expectation of Life at Decennial Ages*

Age	Males			Females		
	Punjab	India	England	Punjab	India	England
50	15·09	14·31	21·36	16·14	14·65	23·69
60	10·22	10·25	14·36	11·48	10·81	16·22
70	5·98	6·23	8·75	7·03	6·74	9·95
80	2·91	3·13	4·93	3·43	3·25	5·56
90	1·19	1·12	2·82	1·31	1·18	3·13

The table affords many interesting comparisons. At the higher ages, in India as well as in England, females enjoy a longer expectation of life. The reason usually given for this generally favourable position of older women is the fact that they have already passed the dangerous period of their reproductive life. From a biological point of view here is the evidence that, once the period of excessive maternal mortality is over, women again present a picture of a more favourable make-up for survival. This argument also points the necessity for making maternity in the Punjab as easy and risk-free a process as is practicable.

While in England the rate of maternal mortality is as low as 2 or 3 for 1,000 births, in the Punjab it is generally believed to be from eight to ten times this figure.

Survival at Late Ages

Another point revealed by a study of Table II is that, although the figures showing the expectation of life at the higher ages are greater in England than in the Punjab, the difference is not as great as that between the figures for the two countries for the expectation of life at birth. Once, therefore, a person in the Punjab has reached an advanced age, he finds himself in a somewhat more favourable position, and may look forward to living to that greater age which his contemporaries reach in the more advanced countries of the world. At the age of 60, for instance, a male in the Punjab can on the average expect to live another ten years, while a similar expectation in England is about 14 years. Females at the age of 60 in the Punjab may hope to live another 11 years, and in England another 16 years. At the advanced ages females in the Punjab enjoy a longer expectation of life than the average for all India, but Punjabi males show no such appreciable advantage. In fact, at the ages 60, 70, and 80 the expectation of life for males in the Punjab is somewhat lower than that for males in India as a whole.

The smallest area within India for which separate figures for the expectation of life have been worked out is the province; but in order to study the variations existing within the Punjab itself we have calculated the proportion of persons above 60 years of age in the different districts to the total population.

The highest proportion of old persons to the total population is to be found in the hilly or sub-montane tracts of eastern and northern Punjab. In fact, four fairly well marked regions are seen as we proceed south and south-west. The lowest proportion is found in the dry and hot districts of the extreme south-east and south-west of the Province—Karnal and Rhotak on the one side and Muzaffargarh on the other. In a general way this geographical pattern lends support to the view that a cooler climate is conducive to the preservation of life. For example, Kangra, a district of 10,000 square miles in the north-east of the Province, although it has a relatively higher number of old people, is not a satisfactory area from the public health and nutritional points of view. The incidence of tuberculosis, pneumonia, dysentery, and diarrhoea is comparatively high, and goitre, rickets, and osteomalacia are peculiar to this area. Yet in spite of such unfavourable circumstances the population includes a higher proportion of older people, and we are led to the conclusion either that the population statistics are entirely unreliable or that the colder climate is a governing factor in this relative longevity.

Changes in Mortality Conditions

When is a person old? In other words, what age should we choose for a study of mortality conditions of old persons in the Punjab and the manner in which these have changed during, let us say, the present century? It is generally believed that when the period of reproduction wanes that of old age begins. In women this is marked by the menopause; in men the onset of senescence may occur at considerably varying periods and be so stealthy as to be undetected by the individual. A philosopher has said that the information that he is old may be suddenly conveyed to a person on overhearing the chance remarks of others, by catching the reflection of his bent back in a mirror, or by finding some girl offering him her seat in an omnibus. But statisticians and biologists have given ages ranging from 45 to 60 as indicating the onset of old age in man.

Vital statistics for the Punjab give mortality figures for ages over 60 in only one group. All we can study, therefore, is the group of persons aged 60 and above in a single combined estimate. The deaths occurring during each year from 1901 onwards in males and females over 60 have been made into rates per 1,000 of population in that particular sex group and are shown in Chart III for each year. The dotted curve is for the females and the continuous line for the males. In spite of considerable fluctuations occasioned by epidemics of

[6] Vaidyanathan, L. S., Actuarial Report annexed to Census of India, 1932, Vol. I.

plague, cholera, malaria, and influenza, the general indication is that from 1900 onwards the mortality rate among old male and female populations have been on the decrease. Separate trend lines have been fitted by the method of least squares to the mortality experience of the sexes over the entire period of 41 years (1900–40), and these are shown on the chart. Both these lines are sloping downwards, which is an indication of a general improvement in the health conditions of the old. The significance of this decline has been tested statistically, and it has been found that chance alone cannot explain such a marked downward tendency.

TRENDS OF DEATH RATES AMONG MALES & FEMALES OVER 60 YEARS OF AGE IN THE PUNJAB FROM 1900 ONWARDS.

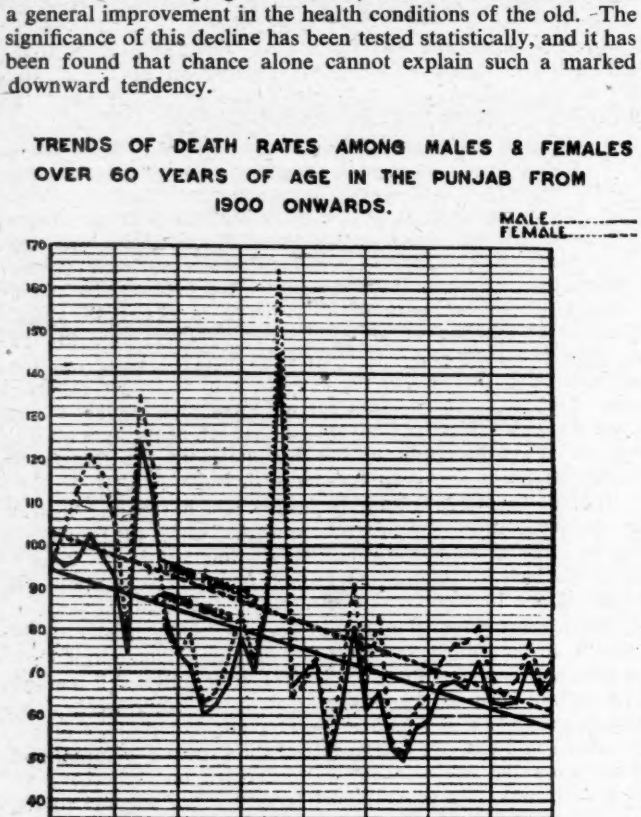

CHART III

We conclude that, generally speaking, there has been during the present century a growing improvement in the condition of old persons as shown by mortality rates—an improvement somewhat more marked among the females.

Long-term Comparisons

Another method sometimes adopted of studying long-term changes in longevity is by comparing figures for expectation of life at decennial intervals, though we have grave doubts whether the Punjab or, for the matter of that, the all-India figures can be quoted with the same degree of confidence as the figures for Western countries.

TABLE III.—*Expectation of Life in Years for Males at Ten-yearly Age Intervals from 1881 to 1931*

Age	1881	1891	1901	1911	1931
0	25	27	23	21	28
10	36	38	35	31	38
20	30	32	30	26	31
30	25	27	25	22	25
40	20	20	20	18	20
50	15	16	15	14	15
60	10	11	11	11	10
70	6	8	6	7	6
80	3	5	3	3	3
90	1	2	1	1	1

Several factors tend to detract from the value of these figures for long-term comparisons. (1) The figures for 1921 are missing, as the actuary did not consider that they would be of any use. At that time the population had not fully recovered from the effects of the great influenza pandemic of 1918. (2) The estimates after each census were made by different actuaries who used varying methods of estimation. (3) The areas for which the estimates have been made have not always been the same. In 1931 the area included not only the Punjab but also the adjoining smaller Indian States, together with Kashmir, the biggest in area of the States, and noted for its highly salubrious and temperate climate. (4) There is some doubt, particularly for the figures for 1901, as to the precise year or period to which the estimates relate.

It is not possible to say how much allowance has to be made for these factors. However, if the broad indications have any significance it can be stated that the degree of improvement noticed at the lower ages between 1911 and 1931 has not been maintained at the advanced years of life. The 1931 census estimates were arrived at without any regard to the recorded death statistics. On a survey of the mortality rates among the aged in the Punjab during the period 1900–40 we have, however, demonstrated already a downward and statistically significant tendency. We therefore conclude that there has been some improvement in the mortality conditions of old people, and that females have had a somewhat greater advantage.

Summary and Conclusions

The present position of longevity in the Punjab has been studied in relation to other countries and different Provinces of British India. Some relevant information regarding remarkably long-lived persons has been set out, together with figures for the expectation of life for different countries and Provinces. An investigation has also been carried out separately for the two sexes.

As compared with the advanced countries of the world, the Punjab has pitiably low figures of longevity. Further, contrary to the general experience that females have a longer duration of life than males, the women in the Punjab, having been subjected to relatively more adverse circumstances, have not been able to enjoy that duration of life with which Nature equips them. This means the potential loss of male as well as of female children. The study indicates that one of the urgent needs is the making of reproduction an easy and risk-free process by all possible means, not excluding a general social improvement of the female population. Improvements in these directions will be doubly beneficial in that not only will there be a saving of the lives of mothers but the chances of survival of their offspring will increase.

It has been shown that some improvement has been occurring in the mortality rates at the advanced ages of both males and females.

MANCHESTER'S VITAL STATISTICS

Manchester in 1944 had the highest recorded birth rate for twenty years, the lowest general death rate for any year of the war period, and the lowest infantile mortality and puerperal causes mortality on record. Comparing the Manchester of seventy years ago with the Manchester of to-day, both the birth rate and the death rate have been almost precisely halved; the marriage rate has been considerably higher during the war years than during the previous sixty years, and the birth rate, although nothing like what it was before the war of 1914–18, has gone up steadily in each war year. Sixty years ago in Manchester the death rate from measles was 0.71 for every 1,000 persons living, it is now 0.02; from diphtheria it was 0.10, and is now 0.01; from whooping-cough it was 0.68, and is now 0.04; from pulmonary tuberculosis it was 2.42, and is now 0.80; from other diseases of the respiratory system it was 5.41, and is now 2.04; and from diseases of the digestive system it was 1.23, and is now 0.58. On the other hand, the cancer mortality has gone up from 0.50 to 2.09, and the mortality from diseases of the heart from 1.37 to 3.17. Nevertheless, the death rate in Manchester is higher than in England and Wales, and the infantile death rate is 54 per 1,000 births as against 46 for the whole country. But Manchester is in the proud position, not for the first time by any means, of having a maternal mortality rate distinctly lower than for England and Wales as a whole. In 1944 it was 1.83 per 1,000 births, the first time it has ever been below 2.0.

CONGENITAL DEAF-MUTISM IN SCOTLAND

The results of an investigation to determine with a reasonable degree of accuracy the extent to which congenital deaf-mutism varies in its incidence in Scotland are described in a report published by the Department of Health for Scotland. Prepared by Dr. J. A. Grant Keddie, one of the medical officers of the Department, the report, which is a factual survey accompanied by appendices giving statistics of the position in the 35 Scottish counties, was submitted to a subcommittee on nutritional problems of the Scientific Advisory Committee. The full committee considered it to be a valuable contribution to the meagre literature on congenital deaf-mutism and recommended its publication.

In the final stage of this investigation Dr. Keddie submitted to detailed analysis particulars he had secured of 928 sufferers from congenital deaf-mutism who had received tuition at one or other of the schools for the deaf in Scotland during the course of the 20 years ended April 30, 1944. Particular attention was paid to the 781 deaf-mutes born in Scotland during the period 1918–37.

Variable Incidence

The results show that the relative incidence of congenital deaf-mutism is very high in Zetland and Caithness; substantially high in Moray and Nairn, Kircudbright and Aberdeen city; and appreciably high in Wigtown, Ayr, Lanark, Inverness, Angus, Dundee city, and Aberdeen county. At the other end of the scale is Roxburgh, where the relative incidence is extremely low. In Ross and Cromarty, Peebles, Berwick, and Midlothian the incidence is very low; and in Stirling, Orkney, Argyll, Dumfries, Perth, and Kinross, Fife and East Lothian, it is appreciably low. Although it was not the intention of the investigator to draw from the results of the survey conclusions as to why the relative incidence of congenital deaf-mutism is high in certain areas and low in others, Dr. Grant Keddie does direct attention to the following facts: (1) The areas shown to present a high relative incidence are for the most part situated either in the north or north-east of the country on the one hand or on the extreme south-west on the other; (2) many of the areas in question have within their boundaries a considerable number of fishing communities; (3) a number of the areas sparsely populated are at a distance from relatively dense centres of population; (4) the areas presenting a low relative incidence are, on the other hand, situated in the main either on the south-east or in the eastern part of the "Central Belt" and are in most instances predominantly rural in character, while being in the position of convenient access to comparatively large centres of population.

In a preface Dr. Andrew Davidson, Chief Medical Officer of the Department, states that the report "furnishes valuable data which, it is hoped, will point the way to those desirous of prosecuting investigations aimed at finding out any biological or other factor that may contribute to congenital deaf-mutism." Dr. Davidson also emphasizes the fact that "an increasing amount of research into the problems of social medicine is being carried out, and there is a general awakening to the need for the collection and collation of material data by which the nature and extent of such problems may be assessed and lines of approach to their solution suggested." The Department has already published reports on "Health and Industrial Efficiency—Scottish Experiments in Social Medicine" (1943); "Infant Mortality in Scotland" (1943); and "Report on Venereal Diseases" (1944). Copies of Dr. Grant Keddie's report (price 3d.) may be obtained from H.M. Stationery Office, 13A, Castle Street, Edinburgh, or through any bookseller.

S. Siegal (*Ann. intern. Med.*, 1945, **23**, 1) records five cases in patients aged from 13 to 27 presenting an unusual syndrome consisting of paroxysms of intense abdominal pain and fever as high as 105° F. Severe prostration, marked signs of peritoneal irritation as well as melaena and vomiting were invariable accompaniments. Urticaria and pain in the chest of a pleuritic character might occur. The onset of the disease was characteristically in early life and attacks recurred over many years. The general condition remained unimpaired. The disease was probably related to allergy.

Nova et Vetera

WILLIAM PROUT: PHILOSOPHER-PHYSICIAN

Though the atomic bomb has renewed interest in the history of atomic theory, no reference has been made to the pioneer work of the physician William Prout. Yet his hypothesis of recurring characteristics in the elements which could be seen when they were placed in the order of their atomic weights led to the formation of Mendeléeff's Periodic Law, which in its turn received its rational explanation in the electronic structure of the atom. Moreover, just as Le Verrier and Adams were enabled to predict the finding of the planet Neptune in the solar macrocosm, so the periodic law predicted the characters of as yet unknown elements in the atomic microcosm. And there can be little doubt as to which discovery most influenced human thought and action.

William Prout was born in 1785 of an old Gloucestershire family. His education was entirely neglected until he was 17, when on his own initiative he placed himself under the tuition of a clergyman in Wiltshire, who sent him on after a time to the Redland Academy at Bristol, where he made such progress that he was advised to go to Edinburgh to study medicine. He graduated M.D. in 1811, and then worked at the twin hospitals of St. Thomas's and Guy's. Always interested in organic chemistry, he gave a course of lectures there on "animal chemistry," which Sir Astley Cooper diligently attended. He proved the chemical nature of urinary calculi and applied this to the treatment of urinary disorders. He was first to show that the kidney does not form urea but merely removes it from the blood.

In 1831 he delivered the Goulstonian Lectures before the Royal College of Physicians, of which he had been elected a Fellow in 1829. His subject was "The Application of Chemistry to Physiology, Pathology, and Practice," in which he showed himself a pioneer in the biochemical approach to medicine. In 1834 he published the final version of his views in his book *On the Nature and Treatment of Stomach and Urinary Diseases.* This was rightly regarded as marking an era in the history of the subject. He showed that the acid of the gastric juice was hydrochloric acid. That the stomach secreted a mineral acid came as a great surprise, and it was not until a good many years later that Maly explained it as the result of the interaction between sodium chloride and acid sodium phosphate. Prout's discovery, added to Wöhler's synthesis of urea, helped to break through the previously existing barrier between organic and inorganic chemistry.

Prout was also greatly interested in meteorology and spent much money in devising elaborate apparatus for his researches. The English standard barometer now in the possession of the Royal Society was designed by him. Throughout, his work was marked by two main characteristics—the power of accurate observation and the capacity for forming wide generalizations. But so little self-seeking was he that he often allowed others to take the credit for his ideas. Particularly so was it with Liebig, who adopted many of his views and sometimes marred them in the taking. Thus on the chemical and physiological relationships between urea and uric acid Liebig was wrong and Prout was right. But the fame of Liebig was so great that for years it obscured the merits of Prout, even in England, which, however, has so often hesitated to accept a scientific discovery made at home until it is re-imported from abroad.

Prout was reserved and retiring, and this was increased by the deafness which afflicted his later life. He was described as of middle height and of slim figure, with delicately chiselled features which expressed "benevolence with great intelligence." He inspired confidence in his patients by the gentleness of his manner. Always scrupulously dressed and groomed, he was a striking figure in any assembly.

He died in 1850. Considering the width of his philosophic generalizations and his many important discoveries, posterity has done scant justice to his merits. We have gathered the fruit of his labours but forget the debt we owe to the gentle philosopher-physician of Sackville Street.

W. L.-B.

Reports of Societies

NORTH OF ENGLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY

Papers and Cases

An Ordinary Meeting of the Society was held in June, when a number of interesting communications were made.

ARTERIAL THROMBOSIS AFTER ECTOPIC PREGNANCY

Dr. ROBERT NEWTON described a case of femoral thrombosis after an operation for a simple ectopic pregnancy. The patient, aged 36, was sent to hospital because of mild pelvic pain. Three weeks before, she had had for 24 hours right-sided abdominal pain, a temperature of about 99.5° F., and vomiting. The practitioner diagnosed mild appendicitis and kept her in bed. Menstruation was due at that time but she did not bleed until ten days later, which continued from then until admission to hospital nine days later. She gave a history that the pain, which had settled down, had recommenced six days before in the left iliac fossa. On admission the pain had disappeared and there was no rigidity. The cervix was softened and the blood pressure 110/80; she was admitted to a gynaecological ward. Two days later a mass was palpated in the left iliac fossa and a tentative diagnosis of ectopic pregnancy was made. Under anaesthesia the mass was confirmed and was felt to rupture during palpation; a needle in the pouch of Douglas produced fresh blood. On opening the abdomen a left ectopic pregnancy was found, and the left tube and ovary were removed. The actual mass was quite small; it was formed of the ovary and tube infiltrated with old blood clot and adherent to the left side of the pelvis. A moderate amount of fresh blood was found free in the abdomen. The patient showed signs of collapse half-way through the operation and again on reaching the ward. Sedatives and salines were given in the early afternoon, and again in the evening. It was probably these sedatives which concealed the onset of the thrombosis. She made no complaint, sleeping through the night, but in the morning, on awakening, she felt some mild pain around her knees and could not feel her feet and legs. When examined she was found to have rigor mortis from the lower part of the thighs downwards. There were no femoral pulses, and she had anaesthesia to a level corresponding to the second lumbar nerve on the left side and the third lumbar on the right. The picture was of obstruction at the aortic bifurcation of both common iliac arteries. It was obviously a desperate case, and the treatment was considered from the point of view of whether life could possibly be saved; which really depended on the presence of an embolism at the aortic bifurcation. If this were removed it might be possible to amputate the legs at a very high level. Indirect approach was used. Both femoral arteries were exposed, both were contracted and filled with blood clot. The blood clot was removed and ureteric catheters passed into the aorta. No fresh blood could be removed by suction. The left internal iliac artery was exposed. No pulsation was felt and no clot could be milked down it. The patient died next day. Post mortem, thrombosis involving both femoral arteries and the lower end of the aorta was found, and there was no embolus. An old clot could be made out on the inner side of the internal iliac artery where the ectopic mass had been adherent.

Points of interest were the rarity of the occurrence, the importance of making early diagnosis, the simple way in which this was frustrated in this case by the shock and the giving of mild sedatives; the difficulty in making a diagnosis between embolism and thrombosis; the decision as to the direct or indirect approach; and, in the case of early diagnosis, whether heparin and dicoumarin (which were given in this case) would be of use.

ALDRIDGE'S OPERATION

Dr. J. W. A. HUNTER read a paper on Aldridge's operation for urinary stress incontinence. The problem of the cure of imperfect urinary control has yet to be solved. There were many operative procedures, and this denoted all the more the uncertainty of cure of any one of them. Varying degrees of cystocele were often found to be present, but it was by no means an invariable accompaniment. Inelastic scar tissue sometimes replaced the urethral supports and sphincter. Probably the commonest procedure was the simple plication of the urethral sphincter by the method of Kelly or Baldy. Two cases treated in this way with a good result were described by Dr. Dougal in 1926. More elaborate operations of a similar nature had been described by Royston and Ross. Advancement of the urethra was devised by Pawlik, and twisting the urethra through many degrees was advocated by Gersuwy—the latter a highly dangerous procedure. Failure of these operations led Miller to devise the use of the pyramidalis muscles as a sling, being pulled down behind the pubis and united around the bladder neck. The pyramidalis often being of poorly developed structure, Aldridge in 1942 devised a modification using strips of abdominal fascia drawn through the rectus muscle and sutured to form a sling under the bladder neck. With this technique Dr. Hunter treated the two cases which he reported.

A median incision was made just below the external urinary meatus to the bladder neck, and the vaginal epithelium widely dissected on either side. With a transverse incision across the lower abdomen about 2 in. above the symphysis two strips of fascia were raised on either side about 4 in. long and 1 in. wide, leaving a median attachment of about 1 in. The gaps in the fascia were sutured. A curved sinus forceps was passed up on either side of the bladder and through the rectus muscle. The strips were drawn down and united under the bladder neck with fine silk sutures. The vaginal epithelium and abdominal wound were closed and a self-retaining catheter inserted and left in for about seven days. Sulphadiazine was given to prevent urinary infection.

UNILATERAL DYSMENORRHOEA

Prof. A. M. CLAYE reported a case of unilateral dysmenorrhoea associated with congenital abnormality. The patient, aged 27, was first seen in August, 1944. The cycle at that time was $\frac{4-5}{42-56}$ with somewhat excessive loss and clots. She had always had dysmenorrhoea confined to the right side of the body, felt chiefly in the right iliac fossa and radiating down the right thigh; it began with the onset of menstruation and persisted through the first two days of the period, associated with vomiting and frontal headache. Pelvic examination showed a small mass on the right side, apparently to the right of the uterus. A skiagram after lipiodol injection revealed the body of the uterus lying to the left, and only the left tube filled satisfactorily. On opening the abdomen a double uterus was found, the left half being continuous with the cervix and the right half apparently ending blindly and having no connexion. The right ovary was three times as large as the left. Small blebs of (?) endometriosis on the surface of the left ovary were cauterized. Right salpingo-oophorectomy was performed and the right portion of the double uterus excised. The pathological report was as follows: "The right ovary contains at least six follicular cysts in the cortical stroma, and a blood cyst 1/2 in. in diameter with a thin lutein margin. The right portion of the uterus was 1½ in. long, apparently lined with normal endometrium. There was no outlet apart from the tube and it contained no blood." Histologically the uterus showed mural endometriosis. In conclusion the speaker noted that Prof. Miles Phillips had in 1935 described unilateral menstrual pain occurring in the case of localized cornual adenomyoma and haematometra in the rudimentary horn of a double uterus. In each case the right side was involved, as in this one, in which the mural endometriosis might have contributed to the pain. Operation resulted in complete cure.

WATERS'S OPERATION

Mr. C. MCINTOSH MARSHALL showed two colour films of Waters's operation (extraperitoneal Caesarean section). He had no desire, he said, to win support for this type of Caesarean section. Had it appeared some twenty-five or thirty years ago it must have won a definite place for itself and much less would have been heard of the "lateral approach"—the operations of Latzko, Döderlein, Kustner, and others. But with the advent of the sulphonamides and penicillin the use of all extraperitoneal operations would probably tend to decrease rather than increase. E. G. Waters described the operation in 1940 (*Amer.*

J. Obstet. Gynec., **39**, 423). Waters wrote thus: "Theoretically the most highly desirable extraperitoneal operation would (1) avoid opening the peritoneum during or after extraction of the baby, (2) avoid injury to the ureters, (3) avoid the easily infected cellular tissue lateral to the bladder, (4) give full view of the separated tissue and the operative field, (5) give ample room for extracting any size foetus, (6) permit careful two-layer closure of uterus and thorough inspection of venous bleeding, if any, (7) leave the patient with a good uterine and abdominal wall."

The operation derived from the Physick principle and from the attempts of Frank and Sellheim to dissect the peritoneum off the front and top of the bladder. In contradistinction to these attempts the reason why Waters's operation was so successful and technically simple rested on the fact that not only was the peritoneum raised but with it the whole thickness of the bladder fascial covering. The operator was no longer dealing with a thin translucent and diaphanous membrane, but was raising by dissection a relatively thick mass of tissue. Apart altogether from the question of infection, certain positive claims could be made for the operation: "burst abdomen" would never occur, intraperitoneal adhesions would not arise, ileus would be less likely, swabs and instruments could not be left behind. In conclusion, Mr. Marshall stated that he had no intention of using this operation extensively or of wavering in his loyalty to the transperitoneal lower-segment operation with a deeply placed transverse incision. On rare occasions, however, he would meet a truly mismanaged and gravely infected case; it was in such that he would put to use his acquaintance with the Waters operation, and by doing so he believed he would be conferring on the patient a greater degree of safety than he could offer her by any intraperitoneal operation.

Correspondence

The Shackled Mind

SIR,—Dr. F. M. R. Walshe in his thesis published in your issue of May 26 (p. 723) gives a very interesting annotation of the deficiencies of modern medical practice in its attitude towards constructive thought. But he apparently suffers from similar deficiencies. He explains the deficiencies of the medical mind—his collection of the superficial facts is excellent; however, his analysis of them and subsequent conclusions are hardly integrating thoughts as they are so incomplete.

With the superficial facts before us (Dr. Walshe mentions that they have been expounded by former prominent medical men) we must in the light of modern knowledge analyse them. In so doing we find that there are few members of our profession whose minds are free from the shackles of "blind acceptance of authority." Our claims to have made medical practice a science are false, as we have failed even to develop a scientific outlook. Medical graduates rarely develop a scientific mind—a mind which can question all except absolute truths, a mind which will not accept as absolute truths dogmas and doctrines laid down by so-called "authorities." Collectively we are still as tardy to accept new, scientifically proven fundamentals as were our forebears in accepting Pasteur's or Lister's work. Dogmas and customs sway our judgments, far too often negating scientific advances. How few of us stop to analyse the physiological basis of a symptom or a sign. If we do not make such simple deductions and integrations how can we hope to analyse and integrate facts in the as yet relatively unexplored jungles, such as brain function or the problem of cancer?

Why should we not all have an unshackled mind, thinking and reasoning in a truly scientific way? We have all had a tertiary education in the sciences. Our very training in present society from the time we first learn to understand our parents is not along scientific lines, but is to make us believe in the dogmas of "authorities," as, for example, the idea of blind acceptance with which we are imbued during our religious training. Medicine does not suffer alone from the stultifying influence of the unscientific mind. The whole social and economic structure of our society is retarded in a similar way. The "shackled" mind is a disease of our present social, economic, and educational systems, just as is the ingrown toenail or constipation a product of modern civilization.

Do we all realize the profound influence of money on medical science? The medical practitioner has a high standard of living in depression or boom—a big incentive to many to enter the profession. A verbal census of students at Sydney University in 1940 showed that of the first-, second-, and third-year students approximately 80% were in the faculty because M.B., B.S. offered either a very sound economic security or a prominent social status—these ideas being imparted by parents. (Apparently few study medicine because they are interested in it.) So within our ranks are a majority who, during their student days at least, sought only technical knowledge and not a scientific training. These seek to conserve their economic interests, so developing a conservation as opposed to a scientific outlook towards medicine. New ideas are irksome unless readily commercializable. Hence the profession, at least subconsciously, slowly progress.

Then there is the economic position of our true scientists. The salary of the researcher is so small. A scientist must live. He, or she, desires normal associations with fellow men and women, a home and a family. So much time is wasted in planning ways and means of meeting essential economic commitments and ensuring economic security. Too often the research is cast aside.

By educational and social reform we must break the shackles of the mind from within and without, producing unbiased minds in an unbiased world, encouraging original integral thought among our young scientists instead of blanketing their ideas. We can only hope for integration to keep abreast of the compilation of facts if we, the present generation at the helms of society and science, steer our ships into the calm waters of a world where money is no longer our overlord, a world where our minds think and reason scientifically, released from the serfdom imposed by economic exploiters of superstition and prophecy. To succeed with the integration of medicine we must bring an inquiring mind to all our problems. The researcher with a trained scientific mind sees his specialty in its true perspective. It all resolves itself into the fact that the failures of medical science to interpret its jargon of facts is a sign of a faulty educational system, the product of our present economic and social structure.—I am, etc.,

Cairns, Queensland. RONALD B. WILES.

Medical Education: Need for Personnel

SIR,—The present change-over from war to peace brings into focus the educational conditions in our universities and medical schools. They form a "key" position in our reconstruction programme. For this reason they need special consideration by those responsible. This need is reinforced by the report of the Goodenough Committee on Medical Education of 1944, and the recommendations of the University Grants Committee now being made to the universities and medical schools that they shall increase their efficiency by creating new departments, by enlargement of establishment, and by greater expenditure on salaries, equipment, and maintenance, with particular reference to research. During the war the establishments have been depleted, postgraduate and clinical training cut down or abolished, and honours science degrees in medical subjects (physiology, biochemistry, anatomy, and pathology) practically abolished in all universities except Oxford and Cambridge. In addition, the Services have rightly had first call on the newly qualified and better graduates.

If the recommendations of these two committees are to be fulfilled (the first stage of these changes operated from Aug. 1, 1945) the present policy governing the direction of medical graduates must be modified. There must be a recognition that with the change from war to peace the requirements of medical education take priority over those of the fighting Services. This means that medical scientists should be demobilized as early as possible, in virtue of their specialist knowledge. It means that newly qualified practitioners who desire to specialize in scientific medicine and who are qualified to do so should be given every encouragement to apply for university posts. Since the graduates from Oxford and Cambridge are too few to meet the demand it is only in this way that suitable individuals can receive a training in laboratory subjects. We can then, at least, commence to make up the grave lack of young medical scientists which has resulted from the paramount needs of the

Services during the war period. Recently, numerous appointments have been advertised in your columns, of chairs, lecturers, and demonstrators. The universities concerned go to considerable trouble and expense to select the most suitable candidate from the limited fields available. Having made their selection, the Central Medical War Committee on the recommendations of its Services Committee not infrequently calls up the selected candidate, regardless of the work and grave trouble they are causing to those responsible not only for medical education and university research but also for carrying out the recommendations of the Government.

We do not now desire to dispute the wisdom or the necessity of such decisions in the past. We do, however, most strongly urge that the change from war to peace in its first phase—namely, the phase of reconstruction—requires a different policy. The essential difference is that in this stage of the peace reconstruction and its needs take precedence over the fighting Services and their requirements. Among the needs of reconstruction the staffing of our universities and medical schools is not the least important, since it is only by attention to this aspect that a continuous adequate supply of well-trained medical graduates can be provided for the general-practitioner, consultant, and public health services. It must be noted that during the war not only has the establishment of the medical schools been depleted and stream-lined, but also the period of compulsory clinical training reduced from 3 to 2½ years. There is no peacetime justification for this policy, but rather for its immediate reversal in the interests of the community.

The needs of the universities and medical schools must, therefore, be regarded as having the same degree of urgency as the needs of other branches of civil medicine. This applies whether in determining the order of release of medical men and women from the Navy, Army, and Air Force or in allocating newly qualified practitioners between the Services and the various types of civilian medical practice. If the universities and medical schools are to play their part in giving the best possible training to students their needs in personnel must be fully appreciated not only by their own governing bodies but also by those Government Departments which guide the general policy of the University Grants Committee and the Central Medical War Committee.—We are, etc.,

A. ST. G. HUGGETT,
Professor of Physiology, University of London, St. Mary's Hospital Medical School.
ESTHER M. KILLICK,
Professor of Physiology, University of London, London School of Medicine for Women.

Trichlorethylene

SIR,—From a persual of your correspondence columns during the past six months it would appear that some misapprehension exists among occasional anaesthetists as to the effects and limitations of trichlorethylene. I should therefore be grateful if I might summarize the position very briefly.

It is now recognized that trichlorethylene is an admirable agent for the induction of general anaesthesia (preferably with nitrous oxide and oxygen) and for the maintenance of a light phase of narcosis when complete muscular relaxation is unnecessary—for example, for many dental and cranial operations, radical mastectomy, multiple excision of varicose veins, etc. The maintenance dose is much less than is often supposed and rarely exceeds a few minims per hour. The characteristic smell of the drug should be just perceptible in the inhaled mixture, and it may be difficult on some types of apparatus to give a sufficiently low concentration. When administered in this way respiration is quiet and slow while recovery is extremely rapid, with gratifyingly few after-effects as compared with ether. On the other hand, if attempts are made to "push" trichlorethylene in order to secure relaxation for upper abdominal or orthopaedic surgery, tachypnoea and other signs of overdosage will soon become evident and recovery may be delayed. Relaxation should be obtained by recognized methods, such as suitable nerve or field blocking, the intravenous injection of pentothal (probably soon to be ousted by curare), or by a change-over to some other inhalation anaesthetic such as ether. It is worth noting, with so many fire hazards in modern operating theatres, that trichlorethylene vapour can be regarded as non-inflammable under normal conditions in this country.

As a general analgesic the drug is probably unsurpassed in efficiency by any other in use at the present time. Two types of inhalers, using air as the vaporizing agent, are in common use. One is the "draw-over" type—e.g., Marrett's and Freedman's—and the other the "blow-through" variety, such as Hill's. Both can be used by the patient himself and are most efficient for many minor surgical procedures and in midwifery.

As regards post-anaesthetic toxic effects, nerve palsies have followed trichlorethylene given in a closed circuit with unsuitable soda-lime which became unduly hot. Under these circumstances a chemical reaction between the two substances can occur and toxic products be formed. To be on the safe side it is therefore recommended never to use a closed circuit with trichlorethylene. One case of suprarenal haemorrhage and liver necrosis has been reported after trichlorethylene had been given as an analgesic in labour. It is doubtful, however, if the drug played any part in the condition.

Arrhythmias are common during narcosis with trichlorethylene as with all inhalation agents. Recent work with the electrocardiograph suggests that the only arrhythmias to have much significance during anaesthesia are the multifocal ventricular type, which, in the case of chloroform, are known to be occasionally followed by ventricular fibrillation. Although this type of arrhythmia occurs in about 10% of patients anaesthetized with cyclopropane or with trichlorethylene, primary cardiac failure is almost unknown with either agent, so that it seems reasonable not to take pulse irregularities too seriously. After using trichlorethylene continuously for over 5 years I have yet to see any serious harm caused to a patient by it, but it is essential to recognize and respect its limitations.

May I conclude by suggesting that the occasional anaesthetist should at least read the literature relating to new drugs and methods before embarking on their use. Failure to do so results at best in disappointment and at worst in disaster.—I am, etc.,

Hill End Hospital, St. Albans. C. LANGTON HEWER.

Ludwig's Angina

SIR,—In cases of Ludwig's angina Major J. H. West (Sept. 15, p. 369) advocates nitrous-oxide-oxygen anaesthesia as a preliminary measure to facilitate the passage of an intratracheal tube. In the same communication he describes my warnings as to possible failure of intratracheal intubation as theoretical. I should like to assure Major West that my objection to any form of general anaesthesia in this emergency is the direct outcome of practical experience.

Regarding N_2O, many years ago my anaesthetist was severely reprimanded. The words of the coroner are engraven on the tablets of my memory: "Surely you now realize that nitrous oxide is a spasmotic anaesthetic, and should never have been given in a case of threatened obstruction to the air passages."

Since my communication in the *Journal* of March 17 (p. 384) I have received letters from three surgeons and a verbal communication from another describing fatal issues as a result of employing inhalation or pentothal anaesthesia in cases of Ludwig's angina. Consequently I feel impelled to plead that my advocacy for regional block anaesthesia in this condition is not, as has been suggested, an arm-chair theory, but so highly practical as to merit the term "vital."—I am, etc.,

London, W.1. HAMILTON BAILEY.

Sciatic "Neuritis"

SIR,—Dr. MacDonald Holmes and Mr. Sworn (Sept. 15, p. 350) quote my remark that in no case of sciatica had an inflamed and swollen sciatic nerve been visually demonstrated as the cause. At the time this was made I had been looking in the journals for some such observation, which I thought might have been recorded when one of the methods of treating sciatica was to mobilize the sciatic nerve after exposing it by operation. I could find no instance in which changes characteristic of active inflammation were described. My search was by no means complete, and I thought that my provocative statement might bring to light some case record which I had missed, but so far as I am aware none has been forthcoming.

Whether the statement for which I am responsible is correct or not, Dr. Holmes and Mr. Sworn err in applying it to the lumbo-sacral nerve roots. Congestion and swelling of the lower

lumbar or first sacral roots have been previously noted in cases of sciatica in which the roots have been exposed at operation. Dr. J. S. Barr (Dec. 17, 1938, p. 1247) drew attention to this finding in association with prolapsed disk, and I have seen it demonstrated, as Dr. Holmes and Mr. Sworn describe, when no protrusion has been discovered. Whether in these latter cases the congestion and swelling are due to oedema from pressure by a protrusion which is not apparent at operation or is of true inflammatory origin is a question which has not been finally settled.

However this may be, Dr. Holmes and Mr. Sworn are mistaken in supposing that they have observed a lesion which, in the paper to which they refer, I considered had not yet been seen by human eyes. Lumbo-sacral "radiculitis" would, I submit, have been a more appropriate title for their paper than sciatic "neuritis."—I am, etc.,

London, W.1. C. P. SYMONDS.

SIR,—I was interested in the article by Dr. MacDonald Holmes and Mr. Sworn on sciatica. I am an orthopaedic surgeon, but, in common with some others, I take a great interest in the physiotherapy side of our work, and thus I have not a confirmed surgical bias, and in the course of a year of both orthopaedic and physiotherapy practice I see and deal with a large number of cases of sciatica. I am not, myself, entirely convinced with the latest idea that all cases of sciatica are caused by a prolapsed disk. I was present at the Royal Society of Medicine meeting when Dr. Symonds and Mr. Pennybacker put forward the above views, which were later strongly criticized in subsequent correspondence in the *Journal*. Anyone who reads American literature would be led to assume that the diagnosis of the disk prolapse is easy, yet I find myself able to cure most cases of sciatica by manipulation or physiotherapy, though, as a surgeon, it would be equally easy for me to perform laminectomies. Thus it is with great interest that I note that Mr. Sworn found that in only 55% of the cases which he subjected to laminectomy was a prolapsed disk found. I think the explanation of the three cases that he describes, which certainly present the picture one would expect from a prolapsed disk and in which, upon operation, none was found, were cured because Mr. Sworn, in performing his laminectomy, had necessarily cut through the ligamentum flavum.

In an excellent article in the *Journal of the American Medical Association* in February of this year Mr. Keeghan describes a series of similar cases in which he noted that the free edge of this ligament in some persons may form a thickened band which may rub against the dural sheath of the outgoing lumbar spinal nerve. Mr. Keeghan ascribes the cure of numbers of his cases where no prolapsed disk was found to the fact that the surgical approach of itself cured the friction on the nerve. This article, and a previous one by the same writer in the *Journal of Bone and Joint Surgery* for April, 1944, are worth more notice in this country.—I am, etc.,

London, W.1. G. O. TIPPETT.

SIR,—In their article on sciatic "neuritis" (Sept. 15) Dr. J. MacDonald Holmes and Mr. B. R. Sworn have described the results of three cases of operation for ruptured intervertebral disks. While adhering to the belief that the most common cause of chronic pain in the distribution of the lumbo-sacral nerve roots is the result of a ruptured disk, they cite these cases as being instances in which a sciatic neuritis has occurred idiopathically and not in the presence of a traumatic lesion. Two of the cases described gave a history of severe strain at some time prior to the onset of the symptoms. The third, that of the housewife, could probably also have given a history of severe strain or, at any rate, of a series of lesser strains giving rise to a cumulatively traumatic effect.

With such histories it would seem correct to assume that some tangible lesion other than that of a ruptured or prolapsed disk had occurred. It is probable that this lesion was a simple minor rotatory displacement of the fifth lumbar vertebra on the sacrum; in other words, a lumbo-sacral strain had been produced. This would give rise to all the symptoms of a sciatic neuritis which could not be explained in any other way. Contingent on the injury, the vertebral strain, spasm of muscle bundles would take place, and, by pressure on the spinal nerves themselves, cause an inflammatory process ascending to the nerve roots. A radiculitis with its attendant symptoms would result.

The theory of the mechanical compression of a nerve root from narrowing of the intervertebral foramen offers no better an explanation for the causation of radiculitis following a vertebral strain than it does in the case of a ruptured or prolapsed disk. The spines of patients suffering from marked scoliosis show very appreciable diminution in the size of their intervertebral foramina on the side of convexity without the development of peripheral symptoms.

On the assumption that the three cases referred to were examples of lumbo-sacral strain the initial steps taken for their cure and for an accurate diagnosis might well have been manipulative rather than operative. In any event the label does not seem to matter very much. Clinically and radiologically the diagnosis of a prolapsed or ruptured disk is surmise. The diagnosis is only confirmed or negatived after operation. Radiologically the diagnosis of lumbo-sacral strain is also surmise. Clinically there are such guiding signs as tenderness to the affected side of the spinous process of the fifth lumbar vertebra and accompanying muscle tension. The suggestion is that, in order to establish a diagnosis and, more pertinently still, probably to effect a cure, a specific manipulation or series of manipulations if necessary should be carried out before operative measures are considered.

A brief description of the technique of the manipulation recommended has been given elsewhere ("Vertebral and Sacro-iliac Strain in the Soldier," *J. R.A.M.C.*, Jan., 1944). If the manipulative procedure succeeds, the diagnosis—that of sciatic neuritis due to lumbo-sacral strain—becomes apparent *post hoc*. If it is unsuccessful resort may have to be made to the hazards of laminectomy.—I am, etc.,

St. John's Wood, N.W.8. E. GORDON FLEMING.

Domiciliary Midwifery and the Family Doctor

SIR,—I read with interest the article on domiciliary midwifery and the family doctor (Sept. 1, p. 294). I fully realize that the sentiments expressed are strongly held by its authors, and also that their intention in writing it was to stress their disagreement with the report of the Royal College of Obstetricians and Gynaecologists. On the contrary, they put forward a detailed argument in favour of a scheme similar to that outlined in the Maternity Services (Scotland) Act, 1937. At the outset I would like to point out that I have no personal knowledge of the workings of this Act, and equally to stress that this letter is not written as a result of any preconceived prejudices of my own, but merely in a spirit of honest inquiry. I am rather surprised by some of the statements which they so confidently make, and in order to save space I have put my queries in tabular form.

"Doctors all over the country are perturbed."—What proof can they give that this is in fact the case? My own experience has been that a large proportion of medical men, in England at least, have little liking for midwifery, and are only too pleased that some of the burden should be taken from them in the manner suggested by the College.

"Increased hospitalization."—They imply that patients prefer to have their confinement at home. Most of my own private patients, on the contrary, express a strong preference for a hospital, and the main difficulty is to find sufficient accommodation.

"We have also tried to show that many of the adverse criticisms of our work as practical obstetricians have not the support of recent investigation."—I have most carefully read and re-read their article, but cannot find any proof of this statement. Such proof would require massive statistics, and without such support a statement of this sort loses its meaning.

"The family doctor has already realized that the more careful and skilful his ante-natal examination the less is the trouble he has at the confinement."—Surely this is the very argument in favour of ante-natal care being carried out by doctors with some extra training. I am firmly convinced that *adequate* ante-natal care requires much more practice than can be obtained by the average general practitioner.

"We contend that successful midwifery depends upon a sense of confidence and an absence of fear."—I find it difficult to see how such a state can influence the incidence of posteriors, breeches, transverse lies, toxaemias, ante- and post-partum haemorrhages, cephalopelvic disproportion, and so on. But surely it is these very conditions which so strongly influence the outcome for both mother and baby.

"*Mastitis, phlegmasia alba dolens are more common in hospital practice than in general practice.*"—With the first statement I disagree. In the last three years I can call to mind 2,500 confinements which were conducted at hospitals with which I am connected, and in one case only did a puerperal mastitis develop. This was remarked upon at the time by the ward sister concerned as being something quite abnormal. On the contrary, I have seen in the same time several very severe breast infections which occurred in domiciliary practice. As to phlegmasia, etc., it is obvious that any deviation from the normal is likely to occur more frequently in hospital than in domiciliary practice, as difficult cases on the whole tend to be sent there. One might as justifiably maintain that maternal deaths are practically unknown in the private practice of midwives, as a medical man has invariably been summoned long before such an occurrence, and the onus is transferred to him.

"*All are agreed that forceps were frequently used when they should not have been.*"—This is, I think, only too true. One general practitioner whom I know very well admits that in his lifetime he applied forceps well over 2,000 times. In that time he attended about 3,500 confinements. What I cannot understand is the argument that many general practitioners now go to the opposite extreme because of the campaign against this wholesale abuse of forceps, and as a result allow suffering, and even the loss of infant life, to occur. Surely this implies lack of knowledge, confidence, or conviction.

"*Tears of the cervix.*"—It is suggested that anaesthesia may act as a preventive of such cervical injuries. Can the authors produce any really adequate evidence that this is in fact the case? On the contrary, can they give any definite proof that forceps application before full dilatation of the cervix is not still only too common in some quarters?

"*The widespread and unnecessary use of Caesarean section or of induction of labour . . . led to protests from influential quarters.*"—This is of course true, though it does not by any means follow that such unnecessary use is by any means limited to obstetric specialists.

"*Errors of judgment.*"—The writers state that, although anyone, however experienced, may make an error of judgment, yet such do "not happen in the commoner difficulties, but in sudden and unforeseen emergencies." All will agree, I think, that posterior positions of the occiput and deep transverse arrests of the head are among the commonest obstetric difficulties. It is my experience—and I am certain that other obstetricians must have had a similar one—that it is these common conditions which so often remain undiagnosed, and to which one is called in consultation.

"*Domiciliary midwifery . . . is safer in all but a small minority of cases than institutional midwifery.*"—I would only counter this statement, made without statistical backing, by another statement, also based on opinion alone. My own experience has been that the hazards of any obstetric difficulty, however slight, assume greatest proportions in the patient's own home, greater proportions in a nursing home, and smallest proportions when the delivery is in a hospital. All obstetricians of my personal acquaintance have repeatedly made a similar observation.

—I am, etc.,

London, W.1. D. G. WILSON CLYNE.

SIR,—I have read with interest the paper by Lieut.-Col. Dale Logan and Dr. MacKenzie, with some of which I am in agreement. I do feel, however, that many of their arguments are open to criticism. Their opening paragraph is a misrepresentation of the object of the Royal College of Obstetricians and Gynaecologists. The object before the Council was to provide a *uniform standard* of obstetrics for the whole country. No one in the profession can deny that the standard of treatment varies considerably in different parts of the country and with different individuals.

The writers suggest that the Royal College is usurping the functions of the General Medical Council. I would suggest that they read the Lloyd Roberts Lecture by Sir Comyns Berkeley, published in 1929 in the *Journal of Obstetrics and Gynaecology of the British Empire*. The record of the General Medical Council regarding obstetric teaching is bad. Any improvement in obstetric teaching has been the result of the General Medical Council's yielding to pressure brought to bear by the teachers and teaching schools.

Had either Lieut.-Col. Logan or Dr. MacKenzie been a resident in a maternity hospital in the early '20s (as they may have been, although it is not noted in the *Medical Directory*) and had the opportunity of seeing many women admitted mutilated as the result of misapplication or lack of judgment in the use of forceps, the ruptured uteri following abuse of pituitary extract, etc., they might view domiciliary practice with a less friendly eye. Midwifery has improved in the interval for, I believe, the following reasons: (1) Better training of medical students. (2) Better training of midwives. (3) Better co-operation between family doctors and consultants. (4) Efficiently managed maternity hospitals. The most marked improvement has occurred since the outbreak of the war. Is this not due to the fact that because so many practitioners were serving with H.M. Forces it was necessary to concentrate maternity cases in institutions where the greatest number of expectant and parturient women received skilled attention from the limited specialist personnel available?

In the paper the fear is expressed that the general practitioner is being excluded from midwifery. My experience may be purely a local one and not representative of the British Isles in general, but in recent years fewer of the younger practitioners are undertaking midwifery. If they wish to avoid the irregular hours, loss of sleep and family life, who can blame them? Many of the younger doctors who are practising midwifery have, unlike their predecessors, held resident obstetric appointments before embarking on domiciliary practice. I feel sure that this type of practitioner will be encouraged and included in the maternity service suggested by the R.C.O.G.

Personally I find the relation between the obstetric consultant and the family doctor remarkably improved. Now, a consultation is called for in most cases of doubt, not, as in the past, to cover a mistake already made. I admit there is a small minority of obstetric consultants who view a case with a surgical rather than a physiological eye, and thereby bring discredit on some life-saving operations, but it is unfair to suggest that consultants have not enough experience of normal midwifery. Their training and appointments of necessity ensure that they have this experience. No man has the right to regard himself as a consultant unless he has lived for at least two years as a resident in a large maternity hospital with an extensive domiciliary practice attached.

The paper raises a most important point regarding the relief of pain. I agree with the writers that this should not be delegated to nurses. I feel sure that if in every area a team of skilled obstetric anaesthetists—for obstetric anaesthesia is a very skilled branch of anaesthetics—were available for either midwife or doctor one would have gone a long way towards solving many of the difficulties and removing some of the dangers of obstetric practice.

I agree with the authors that a patient is safer, from the point of view of sepsis, in her own home than in some institutions. To improve the standard of efficiency of every maternity institution—nursing home or hospital—must be the object of everyone concerned with midwifery. The authors cannot surely be serious when they suggest that a confinement at home is safer than in an institution. Who can tell which patient, even at a normal confinement, will not have a post-partum haemorrhage or retained placenta? The ease with which a blood transfusion can be obtained in an institution must have saved many lives. The presence or absence of neonatal infection is an indication of the efficiency of the nursing in any institution. I know one private department with which I am connected where the maternal mortality in 1,243 cases has been 1.6 per 1,000 (one of these a pulmonary embolus) and where the neonatal mortality is 14 per 1,000. This department is in the sole charge of a skilled nursing staff and five of the much-maligned consultants.—I am, etc.,

Belfast. C. H. G. MACAFEE.

SIR,—The lack of any proposals in the White Paper for improving the existing maternity services made it inevitable that some such report as that of the Royal College of Obstetricians and Gynaecologists should be produced. If "doctors all over the country are perturbed by the recent report" it should be realized that just as many who were looking forward to seeing new ideas on the maternity services incorporated in the White Paper were bitterly disappointed at the omission. It seems to me that the article by Lieut.-Col. Dale Logan and Dr. MacKenzie has been written by men who work predominantly in rural areas, and, of course, rural midwifery is on a very different footing from urban practice. In rural midwifery a doctor has to be good, but modern urban practice has moved very far from the patriarchal scheme of things outlined by Dr. MacKenzie in his contribution to the

discussion on ante-natal care in the *Journal* of Aug. 16, 1924 (p. 271).

Surely the report of the College is eminently reasonable. It is mainly a statement of the shortcomings of the present services in both training of personnel and the conditions in which they have to work; how some of these defects of training and working conditions have been remedied and how they could be still further improved. (I, myself, up to the day I qualified had never applied forceps to a living person, and some of the house-surgeons who come to the hospital where I work have not done so either and the best have done so only a few times, and this in 1945.) We ought to support wholeheartedly any scheme that helps us to increase our training and competence and provides better facilities for us to work under. Let us see how the present system does work.

I have been many years in practice and have attained to a semi-specialty on the staff of a hospital that last year catered for 1,085 admissions and 961 deliveries. These figures are not loaded with emergencies sent in from outside. They are practically all booked cases—i.e., a totally unselected section of the community of the same category as those who decide to have their baby at home with a municipal or private midwife. It has always been my convention that no one knows that any given patient will have a normal labour till that labour is safely over. The following list shows the number of things that happened to our patients and that one assumes would happen to an equivalent number having their babies at home:

Number of patients delivered	961
Number admitted for toxaemia	116
Forceps	88
Caesarean sections	23
Hysterotomy at 28 weeks	1
Breech deliveries	21
Manual removal of placenta for P.P.H.	13
Blood transfusions	20
Induction of labour: medical	25
" " surgical	32
Eclampsias	3
Pathological laboratory investigations	315
Rh-negative patients discovered	5
X-ray examinations	136
Episiotomies	67
Total perineums sutured	267
General anaesthetics	161
Ante-natal attendances	7,759
Post-natal attendances	1,102

Number of patients attending post-natal clinic 808 out of the 961.

There was a very extensive use of analgesics: pethidine, sodium amytal, N_2O and air, etc. How does this list compare with one's knowledge of domiciliary practice as carried out among working-class patients and those attended by municipal midwives?

In 1943 in this city 1,535 confinements were attended by municipal midwives.

1. *Forceps Rate.*—This is very much reduced in domiciliary practice. Midwives tell me they rarely "need" to send for a doctor more than once or twice or 2 to 3 times a year in about 90 deliveries. I consider the forceps rate in the hospital too low. Many more women who are becoming tired might be helped out with low forceps. In my private practice every patient has a forceps delivery except in those cases where labour is so rapid that I simply do not arrive in time. The New York Lying-in Hospital had a forceps rate for 1942 of 571 in 3,151 deliveries. A few years ago I addressed a questionary to the doctors in this area on how they conducted a forceps delivery in a working-class patient's house; 69% replied and the vast majority did it single-handed with only the midwife to help them—i.e., to give the anaesthetic and hold up the legs, etc.; no sterile towels or gown. In this area neither the city or county health departments nor the hospitals provide a sterile outfit of towels and gowns for doctors doing a confinement.

2. *Analgesics.*—Practice varies, no doubt, but in this area very little is given by midwives, even bromide and chloral. Gas-and-air is now available, however, for any patient wishing it. It should be clearly understood that C.M.B. rules preclude any attempt at adequate sedation when only a midwife is in attendance, and even if a doctor is called in for that purpose it is doubtful if more than one dose would be prescribed, which is hardly adequate.

3. *Suturing of Perineums.*—It is, of course, notorious that midwives call for medical aid in a ridiculously low percentage of cases. Every obstetrician knows how far up the posterior vaginal wall a tear may extend without the external skin tear being very great. It simply means that many tears which should be sutured are left, with the consequent tendency to a rectocele. The common practice of simply putting stitches through the skin of the perineum as deeply as possible means an inefficiently sutured perineum. How many patients have an anaesthetic, local or general? I sutured a perineum for a midwife three weeks ago and she told me it was about the very first time she had ever seen anyone use any kind of anaesthetic. She is a municipal midwife of very long experience. It should be realized that a doctor is not always available at the time of the birth. This frequently means that the midwife leaves things ready and the doctor comes when he can and works single-handed. At the other end of the scale the New York Lying-in Hospital in 1942 had 1,876 episiotomies in 3,151 deliveries.

4. *Ante- and Post-natal Care.*—The vast majority of women who decide to have their babies at home attend a municipal ante-natal clinic. After all these years these are still being held in church rooms, disused shops, empty houses, etc., where patients undress behind a couple of screens and everything is makeshift. These clinics are commonly conducted by doctors who do no midwifery themselves and may have had no special training in obstetrics. The post-natal examination of these domiciliary patients presents difficulties because a great many will not go to a strange clinic or hospital to be examined by a new set of people.

What happens to the patients who ought to have a blood transfusion after a P.P.H.? No doubt the "bad ones" were sent to hospital, but the "flying squad" was called out only twice last year, both times to the county. Are the inductions of labour done for toxaemia? I feel only the severe cases go to hospital. Pyelitis and urinary infections are common; are all the urinary investigations done that are necessary? Are all the stillbirths and jaundiced babies investigated for the Rh factor? I doubt it. The City General Hospital ante-natal clinics do routine Wassermann tests on every patient, but these are not done at the municipal clinics. While making these frank criticisms of some aspects of the domiciliary service I would not withhold my share of praise of those men who, through the years, have attained great skill, nor of the midwives who work long hours at all times of the day and night in all weathers and who between them achieve very great results and bring care and help to the very poorest. I do maintain, however, that much more could be done for doctors, midwives, and patients.

The trend for more and more patients to enter hospital for their confinements is not a war phenomenon only, for the numbers have progressively risen year by year long before the war. It is not surprising. Maternity hospitals provide greater and more skilled ante-natal care by the men who are going to be responsible for the confinements, a higher standard of obstetrical judgment and technique. They provide relays of nurses, a doctor on the spot, senior consultants on the telephone, properly equipped theatres and labour wards, and plenty of analgesics; professional anaesthetists, plasma and blood on tap, oxygen and skilled resuscitation measures awaiting the baby; special care for premature infants, a visiting paediatrician, *x*-ray and laboratory facilities on the spot.

Everything is by no means perfect. I do not like the usual method of staffing hospitals by young house-surgeons and senior visiting consultants. Whole-time senior specialists resident in or near the hospital seem preferable. I am not enamoured of labour wards, where there may be several patients at different stages or of different temperaments, where the young and apprehensive is neighbour to someone noisy. Ante-natal clinics should not just be a frantic search for abnormalities. Talks could be given there to patients on some of the commoner things that go wrong in pregnancy; the importance of diet and vitamins, the coming baby, hygiene, suckling, etc. With the patients grouped together it is easier to prepare them psychologically for their coming labour, and there would be time for them to get to know the doctors who were going to be in charge, and time for them to feel at home in the hospital so that it would seem a friendly place. Progress will, I feel sure, be on these lines.—I am, etc.,

Leicester. C. L. SOMERVILLE.

Women in Labour

SIR,—There will always be pain in labour and tearing of the cervix and perineum so long as the unnatural position of lying down is enforced. The native woman squats, as did our ancestors, and so does the country woman when left to herself. Perhaps this is only seen now in remote parts of the British Isles as in the Islands and Highlands of Scotland. Peasants all over the Continent squat for defaecation and for parturition; hence little constipation and easy childbirth.

Reading Engelmann's *Posture and Practices During Labour* one realizes how recent is the now common practice of confinement on side or back. If you want to get a bullet out of a bottle you do not lay it on its side but turn it upside down, that the weight of the pellet may assist, not hinder, the evacuation. The difficulty attendant upon the use of the bed-pan is similar. In this position the pressure of the motion is exerted *unequally* on the circular wall of the bowel and hinders the process, because the normal reflexes are thrown out of gear. The same thing happens in a confinement when the patient is recumbent: the normal stimulus exerted by the weight of the on-coming head is applied on one side of the passages only;

unequal swelling of the parts results, which delays the advance of the child and increases the distress of the patient. Eventually the foetal head is forced past a circular opening now swollen out of shape and often blue with congestion—a condition most favourable to laceration.

My first squatting case in England was at Paddington L.C.C. Hospital. A primigravida of 42 belonging to a medical family, after doing ante-natal exercises designed to make her pelvic joints supple, was willing to forgo chloroform and be confined in the squatting position as an experiment. She talked to us during the proceeding, and said that as the head was passing the vulva (crowning) she felt no pain down there but only in the abdomen. (All went well, perineum intact; she made a good recovery and was able to nurse the child.) Presumably equal pressure numbs the parts exposed to it. But even more important than the actual position at the moment of delivery is the free movement allowed beforehand. This hastens matters and prevents the unnatural one-sided congestion so often seen that we become accustomed to it.

The idea that childbirth must always be so painful is held as an article of faith by many. In the East the psychology of this belief is thus explained. They say that all women are jealous of the child-bearing woman, and many expectant mothers there will tell you they do not go out for fear of ill-luck caused by envious eyes. Can this be the reason that almost every expectant mother in Britain seems to have friends like Job's comforters who discourse on the dangers and agonizing experiences that lie before her? For fear, so often subconscious, inhibits relaxation, and will turn a normal easy labour into a prolonged and difficult one.—I am, etc.,

London, N.W.11. KATHLEEN VAUGHAN.

Physiotherapists and Other Medical Auxiliaries

SIR,—I think it is time to ask whether the arrangements for training, qualification, national control, and social welfare for these important medical aides are entirely satisfactory. I ask this, not only from the point of view of the community as a whole, but on behalf of the interests of the societies concerned in particular.

Let us take the physiotherapists as an example of other societies, which all, incidentally, are tending to compete with the more fundamental sister service of nursing. The physiotherapists train in a variety of schools approved by the Chartered Society of Physiotherapy, which lays down the standard of training and arranges the examinations and standards of qualification. It conducts the examinations and confers the diploma upon successful candidates. The Society forms a register of approved physiotherapists. All of these functions are covered by the terms of its charter. In addition, it is a body which arranges for the postgraduate education of its members and for their social welfare, and takes part in political activity for the establishment of conditions of work and standards of pay.

In other words, the Chartered Society of Physiotherapy covers the functions which in medicine are those of the General Medical Council, the Universities and other examining bodies, the British Medical Association and other more social medical bodies, together with the Medical Defence Union. I have no reason to believe that the Chartered Society does not deal with all these functions satisfactorily, but the situation is an unusual one in the British social-political sphere and does not offer the safeguards which we usually find. It would, perhaps, be wrong to suggest that the various functions of such medical auxiliary societies should be split up into the compartments which we find in medicine as a whole; but some split-up, I do feel, is necessary. The standards of education, examining, and registration should be the function of one body, and perhaps should cover all medical auxiliaries. Conditions of work with social and political problems should be the function of a separate association. This was a problem which had to be faced by a similar body with which I am concerned—namely, that dealing with the training and examining of the special group of nurses employed in orthopaedics. The Joint Examining Board of the British Orthopaedic Association and Central Council for the Care of Cripples has made it perfectly clear that it will refuse to have anything to do with any aspect of the welfare of these people apart from standards of education, examining, and registration.

What has been said about physiotherapists applies also to such sister bodies as those concerned with occupational therapy, radiography, etc.—I am, etc.,

Exeter. NORMAN CAPENER.

Press Publicity

SIR,—Every one of Dr. Leak's colleagues will sympathize with his annoyance at the publicity which has been accorded to his recent contribution on the subject of impending dissolution, and none will require his assurance that such publicity was both unexpected and unwanted. But as in his letter to your columns (Sept. 15, p. 368) he raises the question of newspaper reporting in general, it may not be inappropriate to attempt a dispassionate examination.

Dr. Leak was challenged, so to speak, by a reporter with the charge that he was the first doctor in this country to put into print that he practised euthanasia. Presumably Dr. Leak was concerned not so much with renouncing a claim to a perhaps undesirable priority as in repudiating the practice of euthanasia as this term is understood. He says he found it no easy job to make the reporter understand the difference between *that* and the action he undertook in the interest of his suffering friend. With all respect for Dr. Leak's sincerity and his dialectic powers, I should have thought he was attempting to do something not only difficult but impossible. For although the extraction of a sentence from its context may on occasion lead to distortion and even complete misinterpretation, the statement that he administered an intravenous injection to the patient "because he felt justified in putting him out of his misery" can hardly be open to alternative explanations. That Dr. Leak, in fact, failed to implement his intention does not invalidate that intention, and it is not surprising to find the reporter accepting this conclusion and utilizing it for presentation to a public avid for such information. Need I add that I am not criticizing Dr. Leak's principles nor considering the subject of euthanasia in general, whether ethically, legally, or otherwise.

Perhaps our profession does not adequately appreciate that the doctor and all his doings are "news," attractive material for the provision in the lay press not of instruction but of entertainment. It is the *métier* of a journalist of a certain section of the Press to select outstanding features *ad captandum vulgus*. I do not suggest that he will deliberately misrepresent, but it is the dramatic, the spectacular, the sensational that he is seeking, and with scientific accuracy he has no concern, more especially as in that respect he has no responsibility. No wonder that the innocent contributor to a professional journal is on occasion amazed and indeed appalled by the startling repercussion of something that has been extracted and cleverly presented, perhaps with pretentious head-lines. It is best for us to recognize the inevitable. I do not think that anything can avert such occurrences. Dr. Leak himself expresses the opinion that we should help to educate the public in some of the facts of health and medical practice. A fine ideal; but as a humble amateur I cannot but feel that we can never compete successfully with the profession whose very livelihood depends upon diversion and not instruction.

I doubt if any necessary or useful purpose is served by the "disclaimer" which is published by the doctor who has incurred publicity whether through some innocent inveiglement or quite gratuitously. To all who know him his protestation is quite superfluous, and to any who are uncharitable enough to suppose that publicity was sought or encouraged, the disclaimer may provide additional evidence in support of their belief.—I am, etc.,

London, W.1. ADOLPHE ABRAHAMS.

SIR,—In his letter on press publicity Dr. W. N. Leak speaks of the good will which he has encountered in the newspaper world and calls for greater co-operation between his profession and the journalist profession. As one who has for ten years been a scientific journalist and who has always included medicine within the category of science, I would like to make a plea for closer co-operation than exists. There are, I believe, three reasons why the medical profession should welcome publicity in the ordinary newspapers:

1. Without informed news about medical matters the only medical information received by the common reader is con-

trained in advertisements of patent remedies—at best a one-sided, probably lop-sided, education in the art of healing.

2. Without a clear, though doubtless elementary, knowledge of the body in health and disease and of the rationale of treating it, your patients can give you no help in your task and you cannot rise in intellectual status above the medicine man of a primitive community.

3. In a democratic community you are rightly at the mercy of your patients as a voting body. Through no fault of your own you cannot claim as yet 100% success in your art, and it is well that the general public should realize that it suffers from acts of God far more often than from medical incompetence.

I would add that the voluntary hospitals seem to me much to blame for their neglect of an obvious weapon in their hands. On every day of the year something is happening in some hospital which could be the basis of an article which would interest the public and yet be perfectly accurate and in medical good taste. It is only when an outstanding event—such as the discovery of penicillin—is allowed to "break" that we laymen get any idea of the work being done for us.

What is needed from your profession is the appointing by hospitals, by research laboratories, and by medical learned societies, of officials with publicity sense to whom the lay press can refer for information. So far as the newspapers are concerned, they must appoint men on their staffs with a scientific education, authorized to control all news items and other articles having to do with scientific or medical matters (not least they must be able to control the head-line writers). Such journalists must work out a code of ethics for themselves, and I suggest that the following points are among those to be included: (1) Articles on medical research and discoveries should not appear in the lay press before they have authoritatively appeared in the technical press. (2) "Feature" articles written by journalists who are not medical men should be submitted to a referee for "vetting" as to accuracy. (3) Personal publicity should in most cases be avoided. (4) The encouragement of false hopes of cure and the giving of a false perspective by wrong emphasis must be avoided. The social rather than individual implications are those that should be stressed.

What is needed from the medical profession is a habit of giving generous publicity in a steady day-to-day stream. This is the only way to avoid the "head-line" technique too common to-day. Visualize what happens in a Fleet Street office: an enterprising reporter with only one qualification, "news sense," turns over the pages of the *B.M.J.* or the *Lancet* and notes that somebody's prostate has been treated with a hormone preparation. He rings up a few doctors, who treat him with alarmed contempt; falls back on his own ingenuity and a family medical guide, and the results come out as "cancer cure found." The way to stop this is for the medical profession to develop "news sense" on their part and to co-operate with the well-educated men that Fleet Street can provide.—I am, etc.,

Burwash, Sussex. JOHN LANGDON-DAVIES.

Doctors and the Social Trend

SIR,—I always find Dr. Shackleton Bailey obscure. Such pontifications as "Whereas retention of private practice might have been tolerated as an anachronism best left to die a natural death, it might now be hailed as a certain indication that the Government intended to cater for sectional interests generally and in a way that would perpetuate the reservation of a superservice in life's essentials for the benefit of a small and wealthier minority" (Aug. 7, 1943, p. 181) are too much for my simple mind. I don't see what he is getting at. But to the plain man it would seem to be fairly obvious that amid the mass of verbiage there runs, and has always run, the single thread of confirmed and convinced acquiescence to lay political pressure, or "defeatism" as Drs. Pemberton, Harrower, and Henderson call it (Sept. 1, 1945, pp. 302 and 303).

"The electorate," as typified by the man in the street, has very little interest in the adumbrated regimentation of the doctors, and a patient of mine crystallized the mass of opinion that I have listened to for the last year or so when he said, "Well, doctor, *we* don't know anything about it. It's up to you, and if you doctors have anything to object to you ought to up and say so. *We* can't help you."

On Feb. 27, 1943, p. 266, Dr. Bailey offers "the whole resources of modern medicine to 100% of the population," and invites us to "see to it that every one in that profession is adequately paid for his services." But the 100% issue was flatly turned down last December by the A.R.M., at which I was present, by 147 votes to 88; and it is painfully obvious to anyone like myself who has for forty years been closely watching the "social trend" as it affects medicine that *no* Government, however able, patriotic, and democratic, will *ever* offer the doctors adequate payment for anything they do for them; witness the miserable fees paid for N.H.I., Factory Act examinations, and Service men and women sick on leave. In refutation of this Dr. Bailey produces the following astonishing argument (Oct. 2, 1943, p. 436): "I agree with Dr. Gaskell that remuneration under the Factory and N.H.I. Acts is very low, but I do not think that this is a sample of Governmental valuation of our professional services." In Heaven's name, then, what is it a sample of? He goes on to say, "In my view it represents the valuation we have set upon ourselves by lack of corporate idealism and the debasement of our members to the level of competitive business units." If this means anything, it means that we have in the past and in certain cases been slavishly following the very footsteps of surrender which Dr. Bailey is now inviting us to tread, in response to his "world force," "electorate," and "social trend." On Sept. 4, 1943, p. 311, he takes Dr. Leak to task for saying that "the doctor's duty is to speak and act as he thinks right, without fear or favour," opining that he "fails to see how this ideal can be achieved in any system where the doctor's remuneration is directly proportional to the extent to which he pleases each individual patient." But here I, and I believe the vast majority of my colleagues, are definitely "on the side of the angels"—i.e., Dr. Leak.

Either because we have not the time, or are too lazy, or too much interested in our job, most of us cannot be bothered to be always, or at any time, laying ourselves out in sycophantic manner to "please" our patients in any other way than by being pleasant to them and doing our best to cure them of their diseases, which is after all what they want. On Feb. 27, 1943, p. 266, Dr. Bailey says: "If the medical profession offers every citizen full medical services under the 100% proposal and at the same time announces that it is prepared to accept a higher rate of payment by private arrangement *for the same services* [my italics] the public must conclude either that we think it worth while to exploit the type of person who will pay £2 for what he can get for £1 (but if he were paying £1 to his doctor he presumably would not be in the 100% free scheme), "or else that we are conniving at the suggestion that patients treated under the 100% proposal are not really enjoying the whole resources of modern medicine at all." What dreadful nonsense! I am sure Dr. Bailey does not believe it. Imagine saying to a patient, "Here is a prescription for a bottle of medicine which you can get made up for nothing under the N.H.S. at a chemist, but if you like you can take it down to my own private dispenser and get it made up there, in which case my fee will be 7s. 6d., and the medicine will do you much more good!" Neither Dr. Bailey nor anybody else is such a humbug as that. It is obvious that, even looking at the matter from the most mercenary and commercial point of view, it is to our interest to get our N.H.I. patients well and off our hands as quickly as possible, and in order to do this we give them the best possible treatment.

As to his strenuous objections to any patient "contracting out" of any National Health Service if he so wishes, suppose that the furniture dealers and butchers were foolish and weak enough to allow themselves to be paid salaries and turned into Government Departments. I am a member of the N.F.&B. Service, and I want a new armchair and a leg of mutton. If I do not quite like the look of either of the two commodities offered me under the "take-it-or-leave-it" rules of the N.F.&B.S., why, supposing that I have saved up the necessary money, should I not have the chance of dealing with a furniture shop and a butcher who are not members of the service, and who have a "vested interest" in selling me an armchair which is a joy to sit in and a leg of mutton which looks to me very good?

"The medical profession can no longer defy a force that has swept Mr. Churchill aside" (Aug. 18, 1945, p. 235). But the swing-over to Labour and the temporary eclipse of the greatest leader we have ever had had nothing whatever to do with any feeling for or against the medical profession or medical services. Dr. Bailey might just as well say: "Now that the Japs have given in and the Americans have become so powerful we really must put our house in order and give in all round. Let no one think he can obstruct the course of events."

It is quite on the cards, however, that the new Ministry will see the light, and will realize that tinkering with the doctors now will not reduce the incidence of sickness and ill-health by one iota, and that their true mission is to remove the causes of disease, malnutrition, and national debility not by salaries and bottles of medicine, but by improving housing, environment, conditions of work, and facilities for outdoor recreation. —I am, etc.,

Stowmarket, Suffolk. H. S. GASKELL.

Humanitarianism and the European Situation

SIR,—The recent reports in the press that graves are already in preparation for those who are going to die of starvation during the coming winter in Europe must have brought some realization, even in a world immunized against horror, of the ghastly aftermath of war. Nor to a great many of us does the fact that the greater proportion of those already doomed are our recent enemies alter the tragedy and fundamental "wrongness" of the situation. For whatever the causes and wherever the responsibility lies for this economic and social chaos the result of helplessly watching the slow death of friends and relations can only be the breeding of hate in those who survive. There lies the danger, for there is already enough hate in the world, and in it lies one of the many causes of wars.

I am well aware that the results of war in Europe are inescapable, and that in a world where food and transport have been decreased and disorganized death from starvation is inevitable. I am equally well aware that a great deal is being done both by the United Nations (U.N.R.R.A., etc.) and by individual and voluntary organizations throughout the world to mitigate the disaster. But I believe there is another method which could be applied which not only would save at least some lives, be it only a small proportion, but would also make a great and very real contribution towards world peace. It would involve personal sacrifice, difficulties, and perhaps even hardship on the part of many families, but within the few hours that I have been thinking and talking of this idea four families among my immediate circle have indicated their willingness to make the attempt.

Is it not possible for a considerable number of families to undertake the care of one European child, under the age of, say, 10, for a period of one year? I am quite convinced that we could find without difficulty at least ten thousand families willing to do this in Great Britain, and furthermore to accept this responsibility without an increase in the present ration scale. This could be extended to other countries, who, I am sure, would do likewise—Canada, South Africa, America, Eire, Sweden would all accept a quota. "Quota" is not perhaps the correct word, since the first essential for such a plan to be successful would be for the homes to be offered with absolute certainty before any attempt was made to find the children to go to those homes. Difficulties would be great—language, transport, opposition from those we wish to help even—but they are not insurmountable. Apart from world shortage, the greatest single difficulty in the European food situation is the transport and distribution of food in Europe. That problem is relieved by the suggested solution of taking the child to the food instead of the food to the child. There is ample food in this country alone, low as the fat and protein ration already is, to feed at least 100,000 more children without issuing any more rations than are issued at present and without any real hardship to anyone. I know that to be true from both my knowledge as a doctor and my experience as a prisoner of war. The transport difficulty could possibly be overcome by the use of heavy bombers for transporting the children; it would be a great thought that the use of one of the instruments of liberation was being extended to the salvation of Europe.

If such a plan can be put into operation the long-term effects are incalculable in their potentiality for good. It would be a real step towards fostering that internationalism which so many of us realize is the only hope of survival and progress of the human race. I trust, too, that German children would not be excluded from the plan; indeed they must be included; for apart from all humanitarian ideals the educational value of even 1,000 German children spending a year in British homes would be greater than twenty years of attempted control of education in Germany.

I am writing this letter to the daily press and to the *British Medical Journal* in the hope that someone will investigate the possibility of putting this idea on a practical basis. I am unable to do this myself as I am leaving for the Continent within the next few days to take up work with U.N.R.R.A. —I am, etc.,

ERIC TOWNSEND,
Late Lieut.-Col., R.A.M.C.;
Ex-P.o.W., Oflag 79, Stalag Luft 3, etc.

Skipton.

Obituary

Burnley loses a senior practitioner by the death on Sept. 2 of Dr. JAMES HAWORTH, who had been in practice there for over forty years. Dr. Haworth, who was a native of Bacup, was educated at Manchester Grammar School and Edinburgh University, graduating M.B., Ch.B. in 1898. After holding resident appointments at Oldham, Sunderland, Lancaster, and other places, he entered general practice in Burnley in 1902. During a long period of service his activities were numerous, but his anaesthetic work was that nearest his heart. At the time of his death he was senior anaesthetist to Burnley Victoria Hospital and anaesthetist to Burnley Municipal Hospital; from 1916 to 1919 he had been anaesthetist to the Military Hospital at Whalley. Though latterly not active in the B.M.A. he had at one time been secretary of the local Division. James Haworth was not one of those practitioners who "do anaesthetics"; he was a student of his subject. He paid particular attention to the American literature and became a Fellow of the American-sponsored International College of Anaesthetists. Thoroughly expert in the older methods, he modified or discarded these when convinced by personal trial of the advantages of a newer procedure. He welcomed progress, but viewed change in that canny manner that helps so much in its correct assessment. He leaves a widow, a daughter, and two sons who were both abroad with the Forces. He was one of the many of our profession who, carrying on till the end of the war, have not survived to welcome home their sons and successors.—A. D.

Dr. RONALD CATHCART OZANNE, who died after a short illness on Sept. 14, aged 58, was well known and much liked at Harrogate, where he had been honorary physician to the Harrogate and District General Hospital for many years, and also honorary anaesthetist. From Haileybury College he went to Oxford, and thence to Guy's Hospital after gaining first-class final honours in the School of Physiology in 1909. He graduated M.A., M.B., B.Ch. in 1913. During the war of 1914-18 he served in the R.A.M.C. with the temporary rank of major and was surgical specialist at No. 22 Casualty Clearing Station. On returning to civil life he settled at Harrogate, where his late father had been in practice. Dr. R. C. Ozanne joined the B.M.A. in 1919, and was an active member of the Harrogate Medical Society. He was for some time medical officer for Dr. Barnardo's Homes in Harrogate and at Hollins Hall. The funeral on Sept. 18 was attended by many medical colleagues and representatives of the Harrogate General Hospital and other institutions.

Mr. A. Ernest Sawday writes to supplement the notice published on Sept. 1: I should like to pay a tribute to the memory of Dr. ALEXANDER BROWN, whom I met only once, though I had previously spoken to him on the telephone and corresponded with him a few times. Some weeks before his death I had occasion to visit a patient with him. I picked him up at Bartholomew Road and took him to the patient's house. I found him a very spruce, alert man. He took the greatest pains over the patient, who was suffering from malignant disease. Later he told the patient's wife (to cheer her up) that he himself had had an operation for similar trouble. As we drove away he informed me in the most cheerful manner that he had secondary deposits in his liver. He said that he realized that he could do nothing about it and that he did not

propose to let it worry him and that he hoped to go on working. I am left with the memory of a very fine doctor, a great gentleman, and a very brave man.

A dispatch from the Canberra correspondent of the *Times* states that information has been received from trustworthy Chinese and local sources, and confirmed by the Japanese, to the effect that, on the night after the Americans' first bombing of the island of Nauru, the Japanese executed, among others, the Administrator of Nauru, and the Government medical officer, Dr. B. H. QUIN, and his assistant. Bernard Haselden Quin was born in 1894 and graduated M.B., B.S. of the University of Melbourne in 1920. In 1920–1 he was assistant medical officer at Nauru, and on Ocean Island. After practising in Victoria he returned to Nauru as second medical officer in 1935, and was promoted to the senior post five years ago.

The following well-known medical men have died abroad: Prof. ANTONIN GOSSET, an eminent French surgeon, Fellow of the Académie de Science, Académie de Médecine, and Académie de Chirurgie; Dr. FERNAND ARLOING, professor of bacteriology at Lyons University and an authority on tuberculosis; Prof. KARL FRICK, director of the Röntgen department of the Charité Hospital, Berlin; and Geheimrat Prof. EMIL KRUCKMANN, emeritus professor of ophthalmology at Berlin University, aged 78.

The Services

Temp. Surg. Lieut. K. W. Dodd, R.N.V.R., has been awarded the D.S.C., for gallantry, skill, and devotion to duty while serving in one of H.M. ships on the East Indies Station, in operations which brought about the destruction of a Japanese heavy cruiser of the Nachi class and the probable destruction of a Japanese destroyer.

Col. (Acting) G. M. Warrack, D.S.O., R.A.M.C., has been appointed O.B.E. (Military Division) and Capt. J. Lawson, R.A.M.C. has been mentioned in dispatches in recognition of gallant and distinguished services in the field.

Lieut.-Col. (Temp.) A. T. Marrable, R.A.M.C., has been awarded the D.S.O., and Lieut.-Col. (Temp.) W. C. Alford, O.B.E., Capts. C. C. M. James and V. D. R. Martin, and Capt. (Temp.) G. F. H. Drayson, R.A.M.C. (since killed in action), have been mentioned in dispatches in recognition of gallant and distinguished services at Arnhem.

Major (Temp.) F. I. Evans, R.A.M.C., and Capt. E. B. Naug, I.A.M.C., have been awarded the M.C., and Capt. J. Jacobs and Lieut. F. S. Stubbs, R.A.M.C., and Capt. J. P. Chesney, R.C.A.M.C., have been mentioned in dispatches in recognition of gallant and distinguished services in Burma.

Freed in the Far East.—Surg. Cmdr. R. W. H. Tincker, R.N.V.R. Majors G. O. Gauld, R. P. Graves, and P. E. F. Routley; Capts. G. M. Davies, J. A. Falk, H. D. T. Gawn, J. Hendry, J. D. Lodge, and J. Richardson, R.A.M.C. Lieut.-Col. F. H. A. L. Davidson. Major J. W. D. Goodall, and Capt. A. W. B. Strahan, I.M.S.

Repatriated.—Col. J. T. Simson, A.M.S., and Major W. J. E. Phillips, R.A.M.C.

CASUALTIES IN THE MEDICAL SERVICES

Died.—Surg. Lieut. Ian Gordon Forbes, R.N.V.R.

Wounded.—War Subs. Capts. A. J. Briggs, D. L. Harbinson, and L. G. J. Pitt-Payne, R.A.M.C.

Universities and Colleges

ROYAL COLLEGE OF SURGEONS OF ENGLAND

The following lectures will be delivered at the College (Lincoln's Inn Fields, W.C.) at 5 p.m. each day: Thursday, Oct. 4, Imperial Cancer Research Fund Lecture by Dr. Leslie Foulds, "Observation and Theory in Cancer Research." Thursday, Oct. 11, Lister Memorial Lecture, by Sir Howard Florey, "The Use of Micro-organisms for Therapeutic Purposes." Erasmus Wilson Demonstrations: Monday, Oct. 22, Mr. R. Davies-Colley, Specimens illustrating cysts and innocent tumours of the breast; Wednesday, Oct. 24, Mr. Davies-Colley, Specimens illustrating malignant tumours of the breast; Thursday, Oct. 25, Mr. L. E. C. Norbury, Certain conditions of the kidney, illustrated by specimens and lantern slides. Thursday, Nov. 1, Thomas Vicary Lecture by Sir Arthur MacNalty, "The Renaissance: its Influence on English Medicine, Surgery, and Public Health." Thursday, Nov. 8, Bradshaw Lecture by Mr. C. Max Page, "A Survey of Fracture Treatment."

Medical News

The R.A.F. has announced that medical officers in age-and-service groups 15 to 20 inclusive will be released in November and December.

The Medical Department of the Navy has stated that Naval medical officers in Groups 1 to 7 who have not volunteered for further service will either be released or be on their way home for release by the end of October, and a start will be made on Groups 8 to 15. The Admiralty is awaiting information as to the number of medical officers who wish to remain in the Service before making a further announcement; the aim is to release all groups up to 15 by the end of the year.

The annual luncheon of the Society of Medical Officers of Health was held at the Holborn Restaurant, London, on Sept. 21, with the president, Prof. R. M. F. Picken, in the chair. The principal guest was the Right Hon. Aneurin Bevan, Minister of Health. There were only two speeches—one by the Minister proposing the toast of "The Society," and the President's reply. Mr. Bevan's informal address (which by his wish is not reported) touched on five matters of major importance to public health officers and made a very good impression. He did not discuss the Government's plans for a National Medical Service. Prof. Picken thanked the Minister for his felicitous words and welcomed the official guests, beginning with the Parliamentary Secretary to the Ministry and Sir John Maude, the Permanent Secretary, who, to his regret, was attending for the last time as holder of that office; also representatives of associations of local authorities, the Mayor of Holborn, and officers of the Royal Sanitary Institute. The professional guests whom he saluted were the Presidents of the three Royal Colleges, the President, Chairman of Council, and Secretary of the British Medical Association, the President of the General Medical Council, and the editors of the *Lancet*, the *British Medical Journal*, and the *Medical Officer*. Speaking briefly on the origin of the Society of Medical Officers of Health and the bigger and bigger part it had taken in the promotion of progress, he paid tribute to the early influence upon himself of his teachers at Glasgow—Samson Gemmell and William Macewen—for their emphasis on the importance of social and environmental conditions as factors in the causation of disease. He said that clinical and preventive medicine spoke the same language, though perhaps with slightly differing accents. The success of a medical service would depend on the quality of its men and women, and it must therefore attract the best brains. Lastly, Prof. Picken assured the Minister that his efforts to safeguard the milk supply would have the wholehearted support of the profession in overcoming obstruction by vested interests.

Dr. J. R. Rees, F.R.C.P., medical director of the Tavistock Clinic, will give the opening sessional address at the Welsh National School of Medicine, Cardiff, on Tuesday, Oct. 2.

The Ex-Services Welfare Society (Temple Chambers, Temple Avenue, London, E.C.4) has arranged a medical conference to be held in the Hall of the Royal College of Physicians of Edinburgh on Friday, Oct. 5, beginning at 10.30 a.m., under the chairmanship of Prof. Henderson.

Sir Robert Hutchison will preside at the prize distribution and conversazione to be held at the Royal Dental Hospital of London School of Dental Surgery on Saturday, Oct. 6, at 3 p.m.

Dr. Kate Friedlander will give a lecture on "Mental Ill-health: The Problem of Its Prevention" before a meeting of the Whipps Cross Hospital Medical Society at the hospital on Friday, Oct. 5, at 8.30 p.m.

The following members of the medical profession have been released from internment in Japanese hands: Dr. William Ainslie, Dr. Harry Allan, Dr. Richard Thomas Bonfield Green, Dr. Robert Stevenson Hardie, Dr. Frederick Viel Jacques, Dr. Robert Barr MacGregor, Dr. Nicol Campbell Macleod, Dr. Robert Allan Macnab, Dr. David Morrison McSwan, Prof. Eric Cameron Mekie, F.R.C.S.Ed., Dr. Gordon Alexander Ryrie, and Dr. Henry Scrimgeour.

The Right Hon. Walter Elliot, F.R.C.P., F.R.S., has been elected President of the Royal Institute of Public Health and Hygiene in succession to the late Sir Stanley Woodwark.

Dr. Carl Gustav Jung, professor of psychiatry and psychology at Zürich, celebrated his 70th birthday on July 26.

Dr. C. Ainsworth Mitchell retires from the editorship of the *Analyst* on Sept. 30, after twenty-five years in that position. He was secretary of the Society of Public Analysts and Other Analytical Chemists from 1925 to 1937.

The Empire Rheumatism Council has now permanent offices at Tavistock House (Entrance B), B.M.A. House, Tavistock Square, London, W.C.1. Correspondence is invited from all interested in the campaign against rheumatism. Donations and bequests are welcomed.

From Paris, where the Academy of Medicine in plenary session made him an honorary member, Sir Alexander Fleming went on to Italy to visit medical establishments of the R.A.F., and the University of Rome took the opportunity to confer on him an honorary degree. He was received by General de Gaulle in Paris, and in Rome the Pope gave him an audience.

The Public Health Committee of the Manchester City Council has appointed a deputation to the Ministry of Health to call attention to the serious position which has arisen in the municipal hospitals in the city as a result of the shortage of staff. Unless additional help is forthcoming, many beds will cease to be used in the near future.

The King, on the recommendation of the Secretary of State for Scotland, has approved the appointment of Brigadier Thomas Ferguson Rodger, M.B., Ch.B., M.R.C.P., D.P.M., to be a Medical Commissioner of the General Board of Control for Scotland in room of Dr. Aidan G. W. Thomson, who has retired. Brigadier Rodger is at present consulting psychiatrist to the India Command, and was formerly senior assistant superintendent, Glasgow Royal Asylum, Gartnavel.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* there were respectively 131 and 46 more cases of scarlet fever and diphtheria than last week, but 313 and 67 of measles and whooping-cough. In London the incidence of scarlet fever rose by 27. The largest local outbreak of diphtheria was in Oxford C.B., 10 notifications. In Lancashire the incidence has increased by 50% in the last two weeks, and the 103 cases were a quarter of the total notifications of the country; 38 were recorded in Liverpool C.B. There were 26 fewer notifications of whooping-cough in Lincolnshire. The incidence of measles continues to go down; it has fallen more slowly in the east and south-east (excluding London) than in the rest of the country, these areas having slightly more than one-third of the total notifications.

Dysentery notifications were 8 fewer than last week. The chief centres of infection were Lancashire 40, London 39, Warwickshire 25 (Birmingham C.B. 16), Lincolnshire 15, Yorks West Riding 15, Glamorganshire 15, Middlesex 13, Suffolk 13, Essex 12, Bedfordshire 11.

In *Scotland* scarlet fever notifications went up by 23; the incidence of this disease has risen by 70% during the past four weeks. Twenty-one fewer cases of dysentery were recorded—the first decrease for four weeks; the largest returns were those of Glasgow 43, and Edinburgh 26.

In *Eire* notifications of diphtheria, which rose by 42 cases the previous week, fell by 46 to the level prevailing during August. The notifications of diarrhoea and enteritis were 40 fewer than last week, but the incidence is still very high, 80 cases being recorded in Dublin C.B. A small outbreak of infantile paralysis, involving 7 persons, with one death, has been reported from the Foxrock district of Co. Dublin.

In *Northern Ireland* diphtheria notifications increased from 15 to 23, the largest total of recent months.

The Health of Gloucestershire

The County Medical Officer, reviewing the health of the county during 1944, drew the disquieting conclusion that the health of the people of Gloucestershire has deteriorated and is progressively getting worse. This statement was based on the rise in infant mortality and in tuberculosis and general death rates. Infant mortality increased from 40 in 1943 to 46 in 1944. The number of cases of tuberculosis notified during the year was 533, compared with 386 in the preceding year. The C.M.O. stated that, while it was dangerous to draw conclusions from general impressions, the information obtained from visits to homes, schools, and institutions suggested a general increase in minor ill-health and in major conditions. The most urgent need was an increased and more varied diet, with more protective foods.

Week Ending September 15

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,381, whooping-cough 1,159, diphtheria 495, measles 551, cerebrospinal fever 39, acute poliomyelitis 31, dysentery 292, paratyphoid 15, typhoid 17.

No. 36

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Sept. 8.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1945					1944 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	25	2	22	2	—	41	—	18	1	1
Deaths		—	—				—	—		
Diphtheria	423	20	135	51	23	481	14	158	79	26
Deaths	14	—	1	—	1	3	1	2	1	—
Dysentery	278	39	93	1	—	622	76	111	—	—
Deaths				—	—				—	—
Encephalitis lethargica, acute	2	—	—	1	—	—	—	1	—	—
Deaths		—					—			
Erysipelas			38	5	—			30	10	2
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				97					72	
Deaths	64	9	9	25	11	102	6	31	22	12
Measles*	538	36	53	10	2	1,138	14	84	13	27
Deaths	—	—	—	—	—	—	—	—	—	—
Ophthalmia neonatorum	74	6	21	1	—	63	3	15	2	—
Deaths										
Paratyphoid fever	12	—	—	—	2 (B)	3	—	—	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal†	268	4	6	1	1	303	10	7	—	2
Deaths (from influenza)	8	2	—	1	—	4	—	1	1	—
Pneumonia, primary			126	7				155	11	
Deaths		12		6	4		11		8	5
Polio-encephalitis, acute	3	—				3	—			
Deaths		—					—			
Poliomyelitis, acute	25	2	1	5	3	24	—	12	3	—
Deaths		—					—			
Puerperal fever		2	10		—		1	11		—
Deaths										
Puerperal pyrexia‡	160	8	9	2	—	117	11	11	—	1
Deaths		1					1			
Relapsing fever	—	—			—	1	—			—
Deaths										
Scarlet fever	1,151	90	260	14	26	1,251	30	224	27	44
Deaths	1	—	—	—	—	1	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Typhoid fever	12	—	2	8	1	7	1	2	10	1
Deaths	1	—	—	—	1	—	—	—	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—				—	—
Whooping-cough*	1,177	59	65	53	2	1,223	47	130	33	7
Deaths	7	3	2	1	2	6	2	2	1	1
Deaths (0–1 year)	305	42	48	41	21	338	29	77	60	30
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	3,663	541	549	177	128	3,621	399	577	224	114
Annual death rate (per 1,000 persons living)			12·5	11·4	§			13·3	14·5	§
Live births	6,528	802	842	356	233	5,843	361	811	389	263
Annual rate per 1,000 persons living			16·8	23·0	§			16·5	25·2	§
Stillbirths	182	18	24			185	9	21		
Rate per 1,000 total births (including stillborn)			28					25		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

§ Owing to movements of population, birth and death rates for Northern Ireland are still not available.

Letters, Notes, and Answers

All communications with regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1. TELEPHONE: EUSTON 2111. TELEGRAMS: *Aitiology Westcent, London.* ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

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B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

ANY QUESTIONS?

Lanette Wax SX

Q.—One frequently sees lanette wax SX used nowadays as the base for various emulsifying creams. I should be grateful for information regarding this substance's properties; and also regarding the meaning of the letters SX.

A.—Lanette wax SX is a somewhat variable mixture of the partially sulphated or phosphated higher fatty alcohols, chiefly hexadecyl and octadecyl alcohols. The product originally on the market was sulphated, but it was later found that a phosphated product was superior. Limitation of supplies during the war necessitated, however, a reversion to the sulphated product, and it is this that is on the market at present. We expect the phosphated product to reappear when supplies and material again become available.

It is a white, or creamy-white, wax-like substance, with a melting-point of about 50° C., the sulphated product being somewhat darker in colour, softer and more unctuous to the touch than the phosphated. It readily emulsifies with water, and is used in the preparation of the oil-in-water type of emulsion in the manufacture of cosmetics, toilet articles, and pharmaceutical creams, ointments, etc. The SX was used to indicate an approximate 10% sulphation of the original alcohols and serves to distinguish the sulphated or phosphated product from lanette wax itself, which is simply the mixed alcohols.

Low Blood Pressure

Q.—Could you suggest a routine line of treatment for a man, aged 40, suffering from low blood pressure—fallen from 100/70 to 90/60 in the last three months? A three-weeks holiday has had no beneficial effect. Electrocardiograms show some myocardial degeneration. There is no evidence of Addison's disease or anaemia, and no loss of weight. He has been taking vitamin B and other vitamins, ephedrine and methedrine tablets.

A.—It would appear that this patient needs further prolonged rest. Probably such a fall in blood pressure is not in itself important but an indication of defective vasomotor tone. On the other hand, the hint that myocardial degeneration is present, as shown in the electrocardiogram, might be another factor. In such a case as this full doses of strychnine might be worth while.

In Addison's disease the external appearances are sometimes rather late in developing, and investigation of the blood chemistry might be done with advantage.

Whoop after Vaccine

Q.—I have recently given two injections of prophylactic whooping-cough vaccine—one six weeks ago, the second two weeks ago—to a boy of 3 years. There is no whooping-cough in this area, and I can discover no possible contact, but the child has been whooping merrily for the last four days. Is it possible to cause signs and symptoms of whooping-cough with vaccine, and if so how long will they persist?

A.—In a recent article Sako and colleagues (*J. Amer. med. Ass.*, 1945, **127**, 379) state that "following inoculation an occasional infant developed a paroxysmal pertussis-like cough which disappeared in a short time." It is not stated how soon after inoculation the paroxysmal cough appeared, and in the present instance onset two weeks after the second dose seems rather a long interval for the cough to be ascribed to the vaccine. If, however, there is no whooping-cough in the district and the child has not been exposed to the risk of infection from an outside source, a post-inoculation reaction seems the likeliest diagnosis. If the characteristic cough persists for more than a week, pertussis would have to be excluded by, for example, a white-cell and differential count. Enlarged tonsils and adenoids or sinusitis may also cause a persistent type of cough in a child.

B. proteus Infection of Prostate

Q.—Is there any cure for prostatic infection by B. proteus?

A.—Cure lies in the first instance in careful examination of the urethral aspect of the prostate with a posterior urethroscope. This will almost certainly reveal dilated ducts, with septic material exuding on pressure from the rectum; for after this long time it is most unlikely that the acini are all normal. In all probability many of them are now lined not by normal mucosa but by granulation tissue. The next step, when this is established, is to lay the ducts open by incision with a diathermy knife, or to resect part of the gland with a prostatic resectoscope. This reply is on the assumption that the investigations are first carefully carried out, and, secondly, that they reveal the abnormalities alluded to.

Pain in Ulnar Nerve

Q.—Since December, 1943, a woman aged 34 has had pain and tenderness of the left ulnar nerve, which came on without known cause. She has had intensive vitamin therapy and physiotherapy, and also local injections of novocain, the latter with transient relief only. X-ray examination of elbow and shoulder was negative, and the scalenus syndrome ruled out. She has been immobilized in plaster-of-Paris for six weeks, without relief.

A.—The cause is a local one and does not call for general treatment. The two most likely possibilities are a local tumour—neuroma or neurofibroma—or local irritation in the ulnar groove. The second condition is the result of repeated trauma in a shallow groove, often associated with an increased carrying angle of the elbow. In either case treatment depends on the degree of damage which has been done to the nerve. If there is evidence of wasting of the intrinsic muscles of the hand it may be advisable to explore the nerve with a view to excising a neuroma or transplanting the nerve to the front of the internal condyle, depending upon the cause.

Cancer and the Blood

Q.—What changes are to be found in the blood of patients suffering from cancer, apart from a secondary anaemia?

A.—A detailed analysis of changes in the blood in cancer has been made by O. C. Gruner, whose book, *A Study of the Blood in Cancer* (London, H. K. Lewis), was reviewed in the *Journal* of Aug. 8, 1942. This book deals with macroscopical and microscopical changes in the cells and plasma. Many serological tests have been introduced, and a number of these were reviewed and rejected by Panton in the *Lancet* of April 3, 1937.

Nearly all serious students of the subject have concluded with Ewing that the various reactions in the blood in cancer are non-specific and the diagnostic reactions are equally so. The search for a universal test for cancer is gradually being replaced by the discovery of specific properties belonging to individual forms of tumours, such as the phosphatase reaction in prostatic carcinoma. The secondary anaemia of cancer is an anaemia with no special characteristics to distinguish it from other anaemias resulting from haemorrhage and toxaemia. If the tumour metastasizes to the bone-marrow a leuco-erythroblastic blood picture may occur, but this is also met with in a variety of conditions besides cancer.

Acidaemia in Gas Gangrene

Q.—(1) In Sir Almroth Wright's book, "The Pathology and Treatment of War Wounds," a series of experiments is recorded "showing that the growth of the bacillus of Welch in the blood fluids is promoted by the addition of acid." In the latest edition of Illingworth and Dick's "Surgical Pathology" there occurs this statement: "It is interesting to note that the acid produced by saccharolytic organisms such as Cl. welchii tends to inhibit the growth of the organisms in vitro, but in wounds the acid is partly lost in the profuse discharge and partly neutralized by the inflammatory exudate, by calcium salts, and by the alkaline products of the proteolytic organisms." Sir A. E. Wright deduces, from his findings of a constant acidaemia in patients with gas gangrene, the usefulness of intravenous sodium bicarbonate and of sodium lactate by mouth. This method does not seem to be recommended at present. I should be glad to have the difficulty cleared up.

A.—Insofar as these statements are contradictory, the truth lies in the former. The second appears to overlook the difference between growth in an artificial medium containing a large quantity of fermentable sugar, in which, indeed, saccharolytic bacteria may produce so much acid as to prevent further growth or even to ensure their own destruction, and growth in tissues where the available sugar is considerably less in amount. There is in fact no need to assume the operation of any of the factors mentioned—and the third, the presence of proteolytic organisms, is often absent in true gas gangrene—to account for the continued growth of *Cl. welchii* in the tissues. There is an acidaemia in gas gangrene, and this is an aspect of the disease which deserves more attention than it has received. To what extent correction of the acidaemia could contribute to

recovery is uncertain, but it would perhaps be unduly optimistic to regard the administration of alkali as anything more than an adjuvant to chemotherapy and antitoxin treatment.

Dysmenorrhoea in Middle Age

Q.—*May I have advice on the treatment of dysmenorrhoea in a woman aged 43 years? She is somewhat highly strung and inclined to be introspective.*

A.—Is the woman married or single, parous or otherwise? Where is the pain felt? What is its character? And does it occur before, during, or after menstruation? At what age did the dysmenorrhoea begin? Without knowledge on points such as these, comment on the case is not likely to be very helpful. Dysmenorrhoea of the types common in girls and young women is unusual at this age, and although the symptom may appear to be related to the patient's nervous disposition, local organic disease—especially endometrioma or pelvic infection—should be excluded before any decision is made as to treatment. The presence of some such local condition is even more likely if the dysmenorrhoea has *begun* late in life.

Infection of Skin of Hands

Q.—*A married woman suddenly developed reddening and burning on the right hand, across the palm at the bases of the fingers and also up the sides of the fingers and thumb. Later some desquamation occurred, together with cracks, but no bleeding or sepsis. No other part of the body has been affected. Treatment with various ointments has done no good. There is no itching. The patient has had, like most housewives, cracked fingers. As a child she had a "goitre," but the skin generally is normal now. Could, for example, plunging the hands once a week or so into waterglass when preserving eggs, or handling the baby's nappies and washing them and other household linen, start and maintain such a condition?*

A.—Much more information and investigation would be necessary to give a firm diagnosis, but a probable explanation is that an original damage from household or other irritants has favoured an infection of the skin. This may be of coccal or monilial or other fungous character. Protection from water and household irritants for a period and the use of a gentian-violet ointment at night and a cod-liver-oil cream by day should help:

Acid. salicyl.	gr. 5
Gentian violet	gr. 2½
Halden's emulsifying base	gr. 120
Paraff. moll.	ad 1 oz.

Ft. ung.

If the patient does not object to the colour by day, the cod-liver oil can be added to the violet cream in the proportion of 1 drachm to the ounce.

Explaining Mass Radiography to Workers

Q.—*A factory medical officer has been asked to do a five-minute broadcast to the workers asking them to volunteer for mass radiography. Many of the employees are non-cooperative; they fear that disease may be detected. What lines should the broadcast take to emphasize to all the workers the benefit of being examined?*

A.—Employees are undoubtedly somewhat apprehensive, and consider that any procedure advocated by an employer must be viewed with some suspicion. At the outset of the broadcast it should be stressed that:

1. The mass radiography scheme is a public health measure which, although indirectly beneficial to industry, has as its primary object the health and future welfare of the individual.

2. The result of the examination is strictly confidential between the mass radiography unit and the individual, and will not be disclosed or used in any way without the individual's consent.

3. Should an individual not wish to take any steps for treatment, no further action will be taken and the medical report will remain entirely confidential.

A few remarks on the reasons for mass radiography should follow, emphasizing the silent nature of the disease in the early and most easily curable stage. An analogy might be drawn between an incendiary bomb promptly and effectively tackled and one which by neglect has wrought irreparable damage.

The beneficial results of mass radiography should be elaborated as follows:

(*a*) *Benefit to the Individual.*—If present, the earlier the disease is detected the greater is the prospect of permanent cure, which in some cases can be accomplished without either sanatorium treatment or the necessity for leaving work. Delay in diagnosis frequently means permanent impairment of health, or at best a prolonged period of hospital treatment, before working capacity can be restored.

(*b*) *Benefit to the Wife, Family, and Fellow-workers.*—An undiscovered infectious case in their midst is a continual source of danger.

To alleviate anxiety about the examination, it could be pointed out that, of every thousand persons examined, approximately only ten show evidence of tuberculosis, and of these ten only four require sanatorium treatment. Should sanatorium treatment be necessary, financial allowances are available for both the individual, while under treatment, and his dependants. Last, but of no little importance, is the management's policy to an employee who may have to undergo treatment. If it can be said that his post will be kept open, or, if necessary, more suitable employment offered, this will greatly help in overcoming opposition. Propaganda on these lines has been found to elicit a response from between 70 and 90% of employees.

LETTERS, NOTES, ETC.

Car Without Foot Pedals?

Dr. J. RAMMELL writes: I should be grateful to hear from one of your correspondents as to the possibility of a patient's obtaining a car controlled without the use of foot pedals. The case in question is one of disseminated sclerosis in a young wife and mother, whose legs are insufficiently under control to render driving a possibility, but whose arms and mentality are such that she can drive a motor car. The chance of doing so would solve many domestic problems for her.

Unusual Complication of a Wasp Sting

Dr. B. WYLLIE (Harrogate) writes: A man 80 years old, while going to bed on the night of Aug. 11, 1945, was stung on the left side of the back of his neck by a wasp. As nearly as can be ascertained, the position of the sting was about one inch behind and slightly below the mastoid process. The following day there was marked reddening of the skin over a large area, but there was no great pain and movements were free. The same evening at 5 p.m. he noticed that the left side of his upper lip had fallen and that he was unable to move it. By 9 p.m. he had developed complete paralysis of the left side of his face, with retraction of the face to the opposite side and complete inability to close the eye. He complained of some pain behind the mastoid process. The inflammation round the area of the sting disappeared in a couple of days. Within a few days he started to recover, and now, fourteen days after the onset, there is a marked improvement. He can close the eye and move the muscles of the forehead, although the lower part of the face is still paralysed. The rest of his C.N.S. appears normal and, apart from a moderate degree of hypertension, he is remarkably healthy for his age. Bell's palsy is very rare at the extremes of age. It must be distinguished from peripheral facial paralysis, but the rapidity of recovery in this case helps the diagnosis. It is generally accepted that the paralysis is the result of a local inflammation of the nerve sheath, as it emerges from the stylomastoid foramen. In this case it would appear that the inflammation set up by the wasp sting reached the nerve sheath and thereby caused the palsy.

A Misnomer

Dr. G. J. JONES writes: Cannot something be done to stop this practice of referring to the sulphonamide group of drugs as "m and b tablets"? It seems to me to be a slovenly kind of slang unworthy of a profession. Moreover, the patient is usually told, "I am going to give you m and b tablets." Recently I saw a young woman who is a chronic neurasthenic of the first water. She had just returned from a convalescent home. Her fortnight at the sea had done us both good. She looked well and beaming. In the gayest manner possible she told me she had had a lovely time and had been ill and got m and b tablets. I assumed an air of ignorance and asked her what they were. She told me, "They were the same as Mr. Churchill got." I am sure she still thinks she battled with death. Possibly an aspirin tablet would have sufficed to reduce the slight pyrexia, but the beating of the wings of the angel of death would have sounded more like the unpleasant drone of an angry bluebottle.

Why "Hyperbaric" and "Hypobaric"?

CIBA LTD. write: With reference to the letter from Lieut.-Col. H. Williamson (Sept. 15, p. 368), we fully endorse his plea in the interests of accuracy and of patients' lives for the adoption of "heavy" and "light" in connexion with spinal anaesthetic solutions. In the *Nupercaine Handbook* and other literature, on labels, invoices, etc., the "nupercaine" spinal solutions have for some time been designated "heavy" and "light" in order to avoid any possible confusion resulting from the use of the terms "hyperbaric" and "hypobaric."

Wellcome Medical Diary, 1946

The 1946 Wellcome Medical Diary is now being printed. A considerable number of doctors have ordered copies, and these will be distributed early in December; any change of address since ordering should be notified to the address below. Shortage of paper has again resulted in a limited edition—only a few copies remain unallocated. Doctors who have not yet asked for a copy may apply to Burroughs Wellcome and Co., 183, Euston Road, London, N.W.1. Every effort will be made to ensure that medical men returning to civilian practice receive their diary.